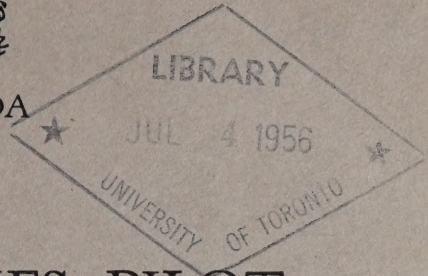


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CANADA



GREAT LAKES PILOT

Volume II

LAKE HURON, GEORGIAN BAY *and the* CANADIAN SHORES of LAKE SUPERIOR

FIRST EDITION 1955

ISSUED BY

THE CANADIAN HYDROGRAPHIC SERVICE
SURVEYS AND MAPPING BRANCH

DEPARTMENT OF MINES AND TECHNICAL SURVEYS
OTTAWA

Price: \$3.50



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The following description and directions, published under the authority of the Government of Canada, form the first edition of the Great Lakes Pilot, Vol. II., combining the former Volumes II and III. In addition to covering the Canadian shore of Lake Huron and Georgian Bay, there is included a brief general description of the United States shore of the Lake, and the Canadian shores of Lake Superior.

This edition, prepared by Capt. C. J. Angus is compiled from Canadian information, supplemented by the latest United States charts and publications. This work embodies all "Notices to Mariners," referring to the district, up to and including No. 126 of 1955.

*Available at the marked price from the Queen's Printer,
Department of Public Printing and Stationery, Ottawa.*

Pilots, masters or others interested are earnestly requested to furnish information regarding newly discovered dangers, changes in aids to navigation, the existence of new shoals or channels, errors in publications, or other information that, it is considered, would be useful for the correction of Nautical Charts and Hydrographic Publications affecting Canadian waters to the

DOMINION HYDROGRAPHER,
CANADIAN HYDROGRAPHIC SERVICE,
SURVEYS AND MAPPING BRANCH,
DEPARTMENT OF MINES AND TECHNICAL SURVEYS,
No. 8 TEMPORARY BUILDING,
OTTAWA, CANADA.

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NOTICE

This volume should not be used without reference to the latest Supplement and Notices to Mariners affecting it, which may have been published.

A Supplement to this volume will be published periodically until the latter is again taken up for revision.

After the publication of Supplement No. 1, each succeeding supplement cancels the former.

The publication of all Supplements is announced in Canadian Notices to Mariners.

The Supplements to this volume will, when published, be issued free of charge to the purchasers of the parent volume.

CAUTION

Bearings in this work are true unless otherwise stated and where given in degrees, they are reckoned clockwise from 000° (NORTH) to 359°.

The **bearings of lights** are given from **seaward**.

The **Latitudes and Longitudes** given in the text are approximate only, and are intended to facilitate reference to the charts.

Figures in brackets given after those denoting feet, fathoms and yards are their equivalent in metres.

The **DATUMS** for the depths and soundings mentioned in this volume are given at the beginning of each chapter.

DISTANCES.—To avoid any possible confusion with the system adopted in the United States Government Sailing Directions for the Lakes, the distances in this work are given in statute or land miles of 1,760 yards, eight of which are approximately equivalent to seven nautical miles of 2,025 yards, as represented on the east and west margins of the charts. The longer distances, however, have the equivalents in nautical miles bracketed with them.

A **cable's length** is assumed to be equal to the tenth part of a nautical mile, 100 fathoms or 200 yards.

HEIGHTS on the land are given in feet and metres above the datum of the chapter referred to.

For the **VARIATION** the chart should be consulted.

The **soundings** shown on the various charts referred to in this volume are in most cases for the actual depths found at the time of the surveys; and the depths are given as corresponding to the lake levels of those years.

Elevations, or **lake levels**, for the year of the survey are given in the title of the chart. Latest recorded elevations for the lake are given in the Monthly Bulletin issued by the Canadian Hydrographic Service.

More detailed information as to lights, buoys, and other aids to navigation may be obtained from the various publications issued by the Department of Transport, and referring to this district.

CONVERSION TABLE

FATHOMS TO METRES

Fathoms	Metres	Fathoms	Metres	Fathoms	Metres
$\frac{1}{2}$	0.5	$3\frac{1}{4}$	6.9	$7\frac{1}{2}$	13.7
$\frac{3}{4}$	0.9	4.....	7.3	8.....	14.6
$\frac{1}{2}$	1.4	$4\frac{1}{4}$	7.8	$8\frac{1}{2}$	15.5
1.....	1.8	$4\frac{1}{2}$	8.2	9.....	16.5
$1\frac{1}{4}$	2.3	$4\frac{3}{4}$	8.7	10.....	18.3
$1\frac{1}{2}$	2.7	5.....	9.1	20.....	36.6
$1\frac{3}{4}$	3.2	$5\frac{1}{4}$	9.6	30.....	54.9
2.....	3.7	$5\frac{1}{2}$	10.1	40.....	73.2
$2\frac{1}{4}$	4.1	$5\frac{3}{4}$	10.5	50.....	91.4
$2\frac{1}{2}$	4.6	6.....	11.0	60.....	109.7
$2\frac{3}{4}$	5.0	$6\frac{1}{4}$	11.4	70.....	128.0
3.....	5.5	$6\frac{1}{2}$	11.9	80.....	146.3
$3\frac{1}{4}$	5.9	$6\frac{3}{4}$	12.3	90.....	164.6
$3\frac{1}{2}$	6.4	7.....	12.8	100.....	182.9

FEET TO METRES

Feet	Metres	Feet	Metres	Feet	Metres
1.....	0.3	11.....	3.4	21.....	6.4
2.....	0.6	12.....	3.7	22.....	6.7
3.....	0.9	13.....	4.0	23.....	7.0
4.....	1.2	14.....	4.3	24.....	7.3
5.....	1.5	15.....	4.6	25.....	7.6
6.....	1.8	16.....	4.9	26.....	7.9
7.....	2.1	17.....	5.2	27.....	8.2
8.....	2.4	18.....	5.5	28.....	8.5
9.....	2.7	19.....	5.8	29.....	8.8
10.....	3.0	20.....	6.1	30.....	9.1

Distance at Which Objects Can be Seen at Sea

Table of distances at which objects can be seen at sea, according to their respective elevations and the elevation of the eye of the observer.

Heights in feet	Distances in Statute or English miles	Distances in Geographic or Nautical miles	Heights in Feet	Distances in Statute or English miles	Distances in Geographic or Nautical miles
5.....	2.958	2.565	100.....	13.228	11.47
10.....	4.184	3.628	110.....	13.874	12.03
15.....	5.123	4.443	120.....	14.490	12.56
20.....	5.916	5.130	130.....	15.083	13.08
25.....	6.614	5.736	140.....	15.652	13.57
30.....	7.245	6.283	150.....	16.201	14.05
35.....	7.826	6.787	200.....	18.708	16.22
40.....	8.366	7.255	250.....	20.916	18.14
45.....	8.874	7.696	300.....	22.912	19.87
50.....	9.354	8.112	350.....	24.748	21.46
55.....	9.811	8.509	400.....	26.457	22.94
60.....	10.246	8.886	450.....	28.062	24.33
65.....	10.665	9.249	500.....	29.580	25.65
70.....	11.067	9.598	550.....	31.024	26.90
75.....	11.456	9.935	600.....	32.403	28.10
80.....	11.832	10.26	650.....	33.726	29.25
85.....	12.196	10.57	700.....	35.000	30.28
90.....	12.549	10.88	800.....	37.416	32.45
95.....	12.893	11.18	900.....	39.836	34.54
			1000.....	41.833	36.28

Example.—Cabot Head light seen just at the horizon, what is its distance from the observer, under ordinary conditions of the atmosphere?

	Statute Miles
Height of light according to the list of lights, 80 feet; distance visible according to above table.....	11.83
Add distance corresponding to height of observer's eye above lake level, say 15 feet.....	5.12
Distance of light from observer.....	16.95

(From U.S. Government publications)

DISTANCES BETWEEN POINTS ON LAKE HURON AND GEORGIAN BAY

	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
1 Port Huron <i>a</i>	*238	†238	†250	225	213	224	232	229	247	243	267	266	265	258	241	238	228	121	94	65	33	63	175	162	119	171	157	166	194	233	243	247	224	269	247
2 Old Mackinac Point <i>b</i>	69	*101	†116	*143	*167	*196	*205	*211	235	231	256	255	254	247	230	227	217	189	192	211	215	186	223	210	163	142	115	83	54	18	7	6	45	90	
3 Sault Ste. Marie <i>c</i>	448	†38	†106	†131	†155	†184	†193	†201	†242	†238	†268	†267	†266	†259	†242	†239	†229	†207	†213	†234	†238	†208	†246	†232	†185	†165	†137	†107	†84	†84	†84	†90	†45		
4 Detour.....	324	†58	†76	†101	†125	†154	†163	†171	201	198	224	222	221	214	197	174	185	162	168	189	193	164	201	187	140	120	92	61	40	39	39	44			
5 St. Ignace.....	†68	*110	†115	*142	*166	*195	*204	226	234	231	256	254	252	246	229	227	217	191	194	214	216	187	224	210	163	143	115	83	55	20	6				
6 Mackinac Island.....	†63	*95	*110	*137	*161	*190	*199	*201	229	226	251	249	248	241	224	221	212	186	189	209	212	184	220	207	159	140	111	79	50	17					
7 Cheboygan.....	†63	*92	*106	*133	*157	*186	*195	*197	221	217	242	241	240	233	216	213	204	175	178	198	202	173	210	196	149	129	101	69	40						
8 Rogers.....	†63	†44	†87	†114	†138	†157	†163	†168	187	183	206	206	206	198	182	177	168	138	142	163	143	171	187	140	120	111	82	62	31						
9 Rockport.....	*79	†79	†92	†119	†123	†136	†143	†143	166	162	187	186	185	178	161	153	148	112	113	132	134	106	142	129	89	62	31								
10 Alpena.....	*107	†107	†120	†143	†131	†145	151	152	174	171	195	193	192	185	168	165	156	109	107	124	125	97	129	116	69	49									
11 Au Sable.....	*135	†135	†148	158	146	160	163	166	183	180	204	202	201	189	177	174	165	98	85	93	86	85	83	69	21										
12 East Tawas.....	*155	†155	†168	175	163	176	180	182	199	196	220	218	217	210	194	190	181	110	94	95	88	60	68	54											
13 Bay City.....	*202	†202	†215	222	210	223	228	229	245	243	267	265	264	257	240	237	228	153	136	137	130	102	13												
14 Saginaw.....	*216	†216	†228	235	223	237	242	242	258	256	280	278	278	271	254	250	241	167	149	151	144	115													
15 Harbour Beach.....	*178	†178	†191	171	159	171	176	176	194	190	214	213	212	205	188	185	175	79	56	47	32														
16 Port Sanilac.....	*207	†207	†219	197	185	196	201	201	219	215	239	238	237	230	213	210	200	97	70	47															
17 Goderich.....	†198	†198	204	169	159	172	172	174	192	189	213	211	210	207	187	183	174	64	36																
18 Kincardine.....	†173	†174	174	141	128	142	149	144	162	158	182	181	180	176	156	153	144	30																	
19 Southampton.....	†166	†166	155	122	110	123	130	125	143	140	163	162	161	157	137	134	125																		
20 Warton <i>d</i>	†188	158	142	110	94	88	79	81	74	71	76	74	73	53	36	29																			
21 Owen Sound <i>d</i>	†197	167	152	119	103	97	97	89	79	75	71	70	69	46	29																				
22 Meaford <i>d</i>	†200	169	153	121	105	96	96	86	71	68	55	53	52	14																					
23 Collingwood <i>d</i>	†217	186	171	138	120	108	107	80	76	76	57	55	54																						
24 Penetanguishene <i>d</i>	†224	187	172	139	120	106	104	94	72	69	12	10																							
25 Midland <i>d</i>	†225	188	173	140	121	107	105	95	73	70	7																								
26 Pt. McNicoll-Victoria H'r <i>d</i>	†227	190	174	142	122	108	106	97	51	71																									
27 Depot Harbour <i>d</i>	†193	155	140	107	87	73	71	62	6																										
28 Parry Sound <i>d</i>	197	159	143	111	91	77	75	65																											
29 Byng Inlet <i>d</i>	155	138	102	70	50	31	27																												
30 Key Harbour <i>d</i>	148	110	94	62	42	22																													
31 French River <i>d</i>	139	101	86	53	33																														
32 Killarney <i>d</i>	110	72	56	24																															
33 Little Current.....	86	48	33																																
34 Gore Bay.....	61	27																																	
35 Algonia Mills.....	43																																		
36 Thessalon.....	0																																		

a From foot of Grand River Ave.
b From sailing course point north of light.
c From abrest east end of U.S. cutter pier, and except those marked † by Middle Neebish and Detour, distances downward through West Neebish are 1 mile

**Via False Detour and North Channels.
†Via Mississippi Strait and North Channel.
‡Via Hay Lake, St. Joseph, and North Channels.
§Via Potaganian Bay and North Channel.*

EXPLANATION

Points in this table are arranged in geographical sequence proceeding from St. Marys River southward along the west shore, and returning northward up the east shore, around Georgian Bay, and westward through North Channel.

Distances in these tables are expressed in the nearest even statute miles; fractions of a mile being taken as half a mile, and fractions over the half dropped. There are, therefore, at times inconsistent by 1 mile in their comparative differences. Thus, measured distances to two given points may differ uniformly by 0.5 mile; if the respective distances to the two points from a certain port measure 116.0 and 115.2, they appear in the table as 116 and 115, a difference of 1 mile; whereas, the next port listed the distances to the same two points may measure 105.4 and 104.6, and both will appear in the table as 105.

Measurements are by the shortest marked or safe direct

*Via False Detour and North Channels.

†Via Mississippi Strait and North Channel.

‡Via Hay Lake, St. Joseph, and North Channels.

§Via Potagamissing Bay and North Channel.

EXPLANATION

Points in this table are arranged in geographical sequence proceeding from St. Marys River southward along the west shore, and returning northward up the east shore, around Georgian Bay, and westward through North Channel.

Distances in these tables are expressed in the nearest even statute mile; fractions of a mile or more being taken as a full mile and those less than half dropped. The results are therefore at times inconsistent by 1 mile in the comparison of distances. Thus, measured distances to two given points may differ uniformly by 0.8 mile; if the respective distances to the two points from a certain port measure 116.0 and 115.2, they appear in the table as 116 and 115, a difference of 1 mile; whereas, from the next port listed the distances to the same two points may measure 105.4 and 104.6, and both will appear in the table as 105.

Measurements are by the shortest marked or safe direct courses, starting (unless otherwise noted) from the main entrances between piersheads of breakwaters or piers or from the principal landings of open roadsteads. Where landings are appreciably remote from protected entrances, the appropriate further distances, if desired, may be ascertained from the harbour descriptions or from charts.

a From foot of Grand River Ave.*b* From sailing course point north of light.

c From abreast east end of U.S. centre pier, and (except those marked †) via Middle Neebish and Detour, distances downward through West Neebish are 1 mile less.

d distances to Georgian Bay ports (except those marked* †, ‡, §) are via the bay entrance from Lake Huron

and St. Marys River points and via Little Current from North Channel points.

Distances Between Points on Lake Superior

	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	
1	Port Colborne.....	668	697	691	771	809	848	847	804	838	880	946	970	968	939	912	920	924	850	807	796	793	799	792	782	779	764	764	702	779	735	708	667	617	575
2	Port Huron.....	360	391	355	455	503	542	541	498	532	575	640	685	662	633	606	614	618	544	501	490	487	493	485	476	473	458	458	486	473	429	400	361	311	269
3	Port Mackinac Point.....	181	212	206	285	324	363	362	319	353	394	461	485	483	454	426	435	439	365	322	311	308	314	306	297	294	279	279	307	294	249	221	183	134	90
4	cSault Ste. Marie.....	91	121	116	195	234	273	272	229	263	305	371	394	383	364	336	345	349	274	*232	221	218	224	215	207	204	189	189	217	204	159	131	92	42	
5	Whitefish Point.....	54	83	74	153	192	231	230	187	221	263	329	352	351	322	294	303	307	*232	*190	179	176	182	173	165	162	147	147	175	162	117	89	50		
6	Grand Marais, Mich.....	78	102	70	144	171	198	197	154	182	224	*289	*312	*310	*282	*252	*260	*264	*187	*143	133	130	135	127	119	123	108	105	129	114	68	40			
7	Munising.....	112	136	97	162	179	193	192	150	174	*212	*271	*293	*291	*263	*233	*240	*245	*168	*124	114	111	116	108	99	113	100	93	110	83	42				
8	Marquette (docks).....	135	154	112	160	164	171	156	128	*140	*181	*239	*261	*260	*231	*201	*209	*213	*136	*93	84	81	84	76	68	91	76	67	78	62					
9	Huron Bay (village).....	165	179	132	159	152	157	156	113	*110	*142	*201	*223	*222	*193	*163	*171	*175	*98	*54	44	41	46	38	30	74	60	44							
10	L'Anse.....	179	192	146	169	162	*145	*144	108	*95	*127	*186	*208	*208	*178	*148	*156	*160	*83	*39	29	26	31	23	14	70	71	51							
11	Mendota Canal.....	138	152	105	123	117	122	121	78	103	145	212	234	232	204	*174	*182	*186	*110	*69	55	52	58	50	41	42	27								
12	Copper Harbour.....	137	145	100	112	99	100	99	56	77	119	185	208	206	178	150	159	163	88	45	56	59	71	65	60	16									
13	Eagle Harbour.....	151	159	114	122	102	96	95	53	65	105	170	194	192	163	135	143	147	72	31	41	45	57	50	56										
14	Portage Entry.....	168	181	135	157	149	*130	*129	94	*81	*113	*171	*193	*192	*163	*133	*141	*145	*68	*25	14	11	17	9											
15	Chassell.....	177	190	143	166	145	125	124	89	76	108	166	188	187	158	128	136	140	63	20	9	6	12												
16	Lake Linden.....	185	198	151	174	151	131	130	95	82	113	172	194	193	163	134	142	146	69	26	15	11													
17	Dollar Bay.....	180	192	146	163	139	119	118	83	70	102	160	183	181	152	122	130	134	57	14	3														
18	Houghton.....	182	195	149	160	136	116	115	80	67	99	157	179	178	149	119	127	131	54	11															
19	Keweenaw Waterway Upper Entry.....	180	187	142	149	126	105	105	69	56	88	147	169	167	139	109	116	120	44																
20	Ontonagon.....	221	228	183	189	165	117	116	103	68	76	114	136	135	106	74	78	82																	
21	Ashland.....	295	304	258	261	227	164	163	165	115	85	71	93	92	63	16	5																		
22	Washburn.....	291	300	254	256	222	160	159	161	111	80	67	89	88	59	12																			
23	Bayfield.....	252	291	246	254	221	149	148	152	99	70	57	78	77	49																				
24	Port Wing.....	312	319	275	272	233	169	168	175	121	83	22	34	32																					
25	Superior.....	340	347	303	300	259	195	195	199	147	107	28	7																						
26	Duluth.....	342	349	305	300	259	195	194	200	147	105	26																							
27	Two Harbours.....	319	327	281	277	236	172	171	177	124	82																								
28	Grand Marais, Minn.....	252	256	214	199	157	92	91	99	47																									
29	Rock of Ages.....	209	213	171	155	112	49	48	53																										
30	Passage Island.....	164	166	127	102	63	44	43																											
31	Fort William.....	207	209	170	141	101	3																												
32	Port Arthur.....	208	209	171	142	102																													
33	Rosport.....	157	155	125	71																														
34	Peninsula Harbour.....	114	112	86																															
35	Quebec Harbour.....	41	49																																
36	Michipicoten Harbour.....	32																																	
37	Gargantua Harbour.....	0																																	

a From foot of Grand River Ave.

b From sailing course point north of light.

c From abreast east end of U.S. centre pier.

*Via Keweenaw Waterway.

a From foot of Grand River Ave.
b From sailing course point north of light.
c From abreast east end of U.S. centre pier.
d Via Keweenaw Waterway.

**Water Surface Elevations of Lake Huron (Covering Period of Navigation
April to November inclusive) in Feet Above Mean Sea Level, for
the Years 1860 to 1954.**

Year	Height in Feet	Highest		Lowest		Year	Height in feet	Highest		Lowest	
		Mon.	Height	Mon.	Height			Mon.	Height	Mon.	Height
1860....	582.78	July...	583.13	Nov...	582.10	1906....	581.12	July...	581.45	Nov...	580.68
1861....	582.92	Aug...	583.36	April...	582.41	1907....	581.25	July...	581.64	Nov...	580.83
1862....	582.79	June...	583.02	Nov...	582.34	1908....	581.22	July...	581.76	Nov...	580.46
1863....	582.18	June...	582.47	Nov...	581.58	1909....	580.68	July...	581.13	Nov...	580.12
1864....	581.68	May...	582.02	Nov...	580.90	1910....	580.23	June...	580.47	Nov...	579.93
1865....	581.58	Aug...	581.96	Nov...	581.04	1911....	579.66	June...	579.97	April...	579.37
1866....	581.20	Aug...	581.52	April...	580.73	1912....	580.26	Sept...	580.60	April...	579.44
1867....	581.65	July...	582.09	Nov...	580.96	1913....	580.91	July...	581.27	Nov...	580.48
1868....	581.09	July...	581.51	Nov...	580.63	1914....	580.35	July...	580.65	Nov...	580.01
1869....	581.34	Aug...	581.93	April...	580.43	1915....	579.77	Aug...	580.03	April...	579.45
1870....	582.26	Sept...	582.57	Nov...	581.77	1916....	580.74	July...	581.16	April...	579.84
1871....	582.10	July...	582.71	Nov...	581.07	1917....	581.39	Aug...	581.91	April...	580.67
1872....	580.79	July...	581.03	April...	580.38	1918....	581.50	June...	581.91	Oct....	581.14
1873....	581.66	Aug...	582.04	April...	580.79	1919....	580.99	June...	581.37	Nov...	580.51
1874....	581.84	June...	582.17	Nov...	581.31	1920....	580.71	July...	581.01	Nov...	580.29
1875....	581.93	Sept...	582.19	April...	581.33	1921....	580.15	May...	580.48	Nov...	579.59
1876....	583.11	July...	583.66	April...	582.13	1922....	580.22	July...	580.62	Nov...	579.65
1877....	582.50	July...	582.77	Nov...	582.21	1923....	579.51	June...	579.82	April...	579.06
1878....	582.31	July...	582.60	April...	581.99			July...	579.82		
1879....	581.35	July...	581.59	Nov...	581.02	1924....	579.29	Aug...	579.65	April...	578.80
1880....	581.70	July...	582.19	April...	580.99	1925....	578.24	July...	578.50	Nov...	577.80
1881....	582.02	Nov...	582.27	April...	581.58	1926....	578.28	Aug...	578.43	April...	577.82
1882....	582.39	Aug...	582.68	April...	582.08	1927....	579.20	July...	579.56	April...	578.72
				Nov...	582.08	1928....	580.24	Nov...	580.68	April...	579.48
1883....	582.76	Aug...	583.40	April...	581.73	1929....	581.82	July...	582.31	April...	581.81
1884....	582.85	July...	583.12	Nov...	582.46	1930....	580.76	July...	581.23	Nov...	579.90
1885....	583.05	Aug...	583.39	April...	582.49	1931....	578.83	July...	579.14	Nov...	578.39
1886....	583.27	June...	583.64	Nov...	582.75	1932....	578.38	July...	578.67	Nov...	577.97
1887....	582.54	July...	582.97	Nov...	581.74	1933....	578.25	July...	578.68	Nov...	577.75
1888....	582.00	Aug...	582.37	April...	581.56	1934....	577.80	July...	577.98	Nov...	577.53
1889....	581.38	July...	581.81	Nov...	580.87	1935....	578.29	July...	578.60	April...	577.95
1890....	581.31	July...	581.71	April...	580.78	1936....	578.47	June...	578.68	April...	578.23
		Aug...	581.71			1937....	578.38	July...	578.66	April...	577.92
1891....	580.66	May...	580.96	Nov...	579.97	1938....	579.27	Aug...	579.69	April...	578.68
1892....	580.59	Aug...	581.04	April...	580.05	1939....	579.61	Aug...	579.99	April...	578.98
1893....	580.88	July...	581.35	April...	580.25	1940....	579.03	Sept...	579.32	April...	578.58
1894....	581.00	July...	581.47	Nov...	580.58						
1895....	579.92	June...	580.19	Nov...	579.26	1941....	578.92	Nov...	579.09	April...	578.72
1896....	579.69	Aug...	580.01	April...	579.14	1942....	579.82	July...	580.15	April...	579.38
1897....	580.43	Aug...	580.84	April...	579.84	1943....	580.91	Aug...	581.48	April...	579.87
1898....	580.51	July...	580.82	Nov...	580.13	1944....	580.52	July...	580.79	Nov...	580.15
1899....	580.57	July...	581.08	April...	579.86	1945....	580.58	July...	580.98	April...	579.91
1900....	580.46	Sept...	580.72	April...	579.98	1946....	580.57	July...	580.93	Nov...	580.02
1901....	580.80	Aug...	581.11	Nov...	580.43	1947....	580.67	July...	581.10	April...	579.72
1902....	580.39	Aug...	580.83	April...	579.91	1948....	580.39	July...	580.84	Nov...	579.51
1903....	580.59	Oct...	580.83	April...	580.27	1949....	579.28	July...	579.68	Nov...	578.55
1904....	581.21	July...	581.55	April...	580.63	1950....	579.67	Aug...	580.01	April...	578.98
1905....	581.22	July...	581.57	April...	580.66	1951....	581.29	Nov...	581.65	April...	580.36
						1952....	582.31	Aug...	582.71	Nov...	581.58
						1953....	581.75	July...	582.16	Nov...	581.16
						1954....	581.44	Oct...	581.74	April...	580.71

Referred to U.S. Lake Survey datum of 1903 adjustment.
 Water levels are at their lowest during the four winter months.
 The lowest montly mean recorded was 577.42 feet, in February, 1934.

**Water Surface Elevations of Lake Superior (Covering Period of Navigation
April to November inclusive) in Feet above Mean Sea Level for the
Years 1860 to 1954.**

Year	Height in Feet	Highest		Lowest		Year	Height in feet	Highest		Lowest	
		Mon.	Height	Mon.	Height			Mon.	Height	Mon.	Height
1860....	603.00	Oct....	603.12	April..	602.69	1910....	601.85	Aug....	601.98	April..	601.62
1861....	603.10	July....	603.36	April..	602.42	1911....	601.61	Sept....	602.18	April..	600.54
1862....	602.73	Sept....	603.02	April..	602.09	1912....	602.23	Sept....	602.57	April..	601.45
1863....	602.27	Sept....	602.73	April..	601.90	1913....	602.48	Oct....	602.92	April..	601.64
1864....	601.97	Sept....	602.25	April..	601.69	1914....	602.48	Sept....	602.80	April..	601.84
1865....	602.63	Sept....	603.08	April..	601.77	1915....	602.21	Oct....	602.76	April..	601.30
1866....	602.50	Aug....	602.94	April..	601.98	1916....	603.40	Sept....	603.83	April..	602.33
1867....	602.69	July....	603.05	April..	602.12	1917....	602.53	Aug....	602.76	April..	602.21
1868....	602.48	Nov....	602.75	May....	602.12	1918....	602.17	Nov....	602.44	April..	601.46
1869....	602.96	Sept....	604.08	April..	602.04	1919....	602.38	July....	602.60	April..	601.96
1870....	602.49	Sept....	602.72	April..	601.99	1920....	602.58	Aug....	602.92	April..	602.12
1871....	602.32	Sept....	602.56	April..	602.22	1921....	602.31	Aug....	602.60	April..	601.70
1872....	602.26	Sept....	602.77	April..	601.68	1922....	602.23	Sept....	602.67	April..	601.38
1873....	602.71	Sept....	602.77	April..	601.14	1923....	601.80	Sept....	602.06	April..	601.29
1874....	602.71	Oct....	603.14	April..	601.71	1924....	601.48	Oct....	601.89	April..	601.02
1875....	602.81	Oct....	603.09	April..	602.19	1925....	601.16	Aug....	601.45	April..	600.75
1876....	603.35	Sept....	603.17	Sept....	602.28	1926....	600.83	Sept....	601.45		
1877....	602.45	Aug....	603.93	April..	602.21	1927....	602.25	Oct....	601.52	April..	599.99
1878....	601.88	Aug....	602.76	May....	602.10	1928....	602.71	Aug....	602.63	April..	601.34
1879....	601.41	July....	602.14	April..	601.52	1929....	602.64	Oct....	603.32	April..	601.72
1880....	602.08	Aug....	601.60	May....	601.01	1930....	602.48	July....	602.60	April..	602.45
1881....	602.35	July....	602.45	April..	600.78	1931....	602.03	Nov....	602.86	April..	601.85
1882....	602.28	Oct....	602.95	April..	601.53	1932....	602.03	Nov....	602.30	April..	601.40
1883....	602.12	Sept....	602.60	April..	601.81	1933....	602.43	Aug....	602.81	April..	601.81
1884....	601.93	Aug....	602.33	Nov....	601.94	1934....	602.56	Sept....	602.78	April..	601.83
1885....	602.29	Oct....	602.52	April..	602.32	1935....	602.66	Oct....	602.90	April..	602.08
1886....	601.94	Aug....	602.64	April..	601.67	1936....	602.69	Aug....	603.05	April..	602.17
1887....	602.02	July....	602.08	April..	601.62	1937....	602.59	June....	602.88	April..	602.05
1888....	602.57	Aug....	602.28	May....	601.76	1938....	602.57	July....	602.88	April..	601.74
1889....	602.27	Aug....	603.02	April..	601.44	1939....	602.98	Sept....	602.92	April..	602.29
1890....	602.16	Sept....	602.67	April..	601.69	1940....	602.89	July....	603.31	April..	602.19
1891....	601.78	Sept....	602.60	April..	601.36	1941....	602.29	Aug....	603.35	April..	602.19
1892....	601.65	Aug....	601.95	April..	601.43	1942....	602.51	Sept....	602.74	April..	601.41
1893....	602.14	Sept....	601.93	April..	601.02	1943....	602.79	Oct....	603.17	April..	601.56
1894....	602.83	Aug....	601.16	April..	601.02	1944....	603.05	Sept....	603.00	April..	602.16
1895....	602.75	Aug....	602.54	April..	601.16	1945....	602.80	July....	603.52	April..	602.28
1896....	602.78	Oct....	603.10	April..	601.91	1946....	602.84	Sept....	603.42	April..	601.61
1897....	602.79	Aug....	603.14	April..	602.01	1947....	602.71	Aug....	603.16	April..	602.56
1898....	602.35	Aug....	603.12	April..	602.01	1948....	602.92	Sept....	602.95	April..	602.26
1899....	602.97	Sept....	603.20	April..	602.11	1949....	602.29	July....	603.38	April..	602.05
1900....	602.85	Sept....	602.82	April..	601.46	1950....	602.49	Sept....	602.61	April..	601.78
1901....	602.85	Sept....	603.51	April..	601.76	1951....	602.22	Aug....	602.96	April..	601.62
1902....	602.67	Oct....	603.54	April..	602.13	1952....	603.36	Aug....	603.68	April..	602.03
1903....	692.98	Aug....	603.22	April..	602.22	1953....	603.01	Sept....	603.59	April..	602.78
1904....	602.84	Sept....	692.93	April..	602.02	1954....	602.41	Aug....	603.66	Nov....	602.51
1905....	602.91	Oct....	603.40	April..	602.07			Aug....	603.26	April..	601.85
1906....	602.71	Oct....	603.26	April..	602.17			July....	602.91	April..	601.51
1907....	602.68	Oct....	603.33	April..	602.25						
1908....	602.45	Sept....	602.95	April..	602.15						
1909....	602.06	Sept....	603.12	April..	601.94						
		Oct....	603.12								
		Aug....	602.87	April..	601.63						
		Aug....	602.42	April..	601.29						

NOTES CONCERNING CHARTS, LISTS OF LIGHTS, SAILING DIRECTIONS, AND ON SUBJECTS OF GENERAL INTEREST TO MARINERS

In the following general notes acknowledgement of indebtedness must be made to the Admiralty publications of a similar nature.

A great amount of matter has been transcribed almost bodily from the above authorities.

The principal published guides to navigation—the Charts, the Sailing Directions, Tide and Current Tables, List of Lights and Fog Signals, List of Radio Stations—are all affected by the continual changes and alterations that take place, and mariners and owners are cautioned to use only the latest and corrected official editions of these publications.

All charts are corrected from the latest information received in the Hydrographic Office, to date of publication, or date of corrections, as given in the lower left-hand corner.

The Light Lists and other guides mentioned above, should be consulted for changes made after the chart was issued. The Sailing Directions, however, cannot from their nature be so corrected, and in all cases, where they differ from charts of later date, the latter must be taken as the guide.

When navigating narrow channels, approaching or entering harbours, or other restricted passages, the large scale charts of such waters should be used.

Corrections from Supplements.—Notations referring to the Supplements should be made on the pages of the Sailing Directions affected.

Corrections from Notices to Mariners.—All small but important corrections, that can be made by hand, are published in “Notices to Mariners”, and masters should at once place them on the charts to which they refer; in some cases “correction patches” or “blocks” covering a small area are issued. These should be carefully placed in position on the chart affected. When large corrections become necessary a new edition of the chart is issued. These new additions are issued principally because of changes in depths, channels, or in aids to navigation, and it is both dangerous and reprehensible to continue the use of the old charts.

In a communication with Hydrographic Offices concerning charts, the number of the chart (which will be found in the lower right-hand corner) should be given, as well as the date of publication (found below the lower middle margin) and dates of corrections, that the edition referred to may be known.

The **Canadian Lists of Lights and Fog Signals** are published annually, about March 1 of each year. Alterations that take place after issue are notified to the public, and such alterations should be immediately noted in lists and on charts.

The Lists of Lights should always be consulted as to the details of a light, as the description in the Sailing Directions or on the chart may be obsolete, in consequence of changes made since publication.

The **Sailing Directions** are not corrected between issues, except occasionally for very important new rocks or dangers. “Notices to Mariners” referring to each volume are published from time to time.

When “Notices to Mariners” have accumulated since the last revision of the Sailing Directions, a supplement may be issued. This supplement will contain all notices issued and notes as to cancellation of certain portions of the edition of Sailing Directions to which they refer.

Whenever Charts, Sailing Directions or Lists of Lights are corrected by hand, a note to that effect should be written on margin with date and authority for the correction.

The Use of Charts as Navigational Aids, and General Remarks Relating To Practical Navigation

1. Accuracy of a Chart.—The value of a chart must manifestly depend upon the accuracy of the survey on which it is based, and this becomes more important the larger is the scale of the chart. 5

To estimate this, the date of the survey, which is always given in the title, is a good guide. Besides the changes that, in waters where sand or mud prevails, may have taken place since the date of the survey, the earlier surveys were mostly made under circumstances that precluded great accuracy of detail, and, until a plan founded on such a survey is tested, it should be regarded with caution. It may, indeed, be said that, except in well frequented harbours and their approaches, no surveys yet made have been so minute in their examination of the bottom as to make it certain that all dangers have been found. The fullness or scantiness of soundings is another indication as to whether a chart is complete. When the soundings are sparse or unevenly distributed, it may be taken for granted that the survey was not made in great detail. 10 15

Close examination by sounding is the only method by which surveys on a large scale can generally be made, and in view of the vast mileage of surveys yet requiring completion, in the interests of navigation it would be a waste of time to undertake large scale coast surveys. 20

Blank spaces and irregular gaps among soundings on old charts mean that no soundings have been obtained in these spots. When the surrounding soundings are deep it may with fairness be assumed that in the blanks the water is also deep; but when they are shallow, or it can be seen from the rest of the chart that reefs or banks are present, such blanks should be regarded with suspicion. This is especially the case off rocky coasts, and it should be remembered that in waters where rocks abound it is always possible that a survey, however complete and detailed, may have failed to find every small patch. 25

A wide berth should therefore be given to every rocky shore or patch, and *this rule should be invariably followed, viz., that instead of considering a coast to be clear unless it is shown to be foul, the contrary should be assumed.* 30

2. Fathom Lines, a Caution.—Except in plans of harbours that have been surveyed in detail, the five-fathom line (in some recent editions the six-fathom line) on most charts is to be considered as a caution or danger line against unnecessarily approaching the shore or bank within that line, on account of the possibility of the existence of undiscovered inequalities of the bottom, which nothing but an elaborate detailed survey could reveal. In general surveys of coasts or of little frequented anchorages, the necessities of navigation do not demand the great expenditure of time required for such a detailed survey. It is not contemplated that ships will approach the shores in such localities without taking special precautions. 35 40

The ten-fathom line is, on rocky shores, another warning, especially for ships of deep draught.

Charts where no fathom lines are marked must be specially regarded with caution, as it generally means that soundings were too scanty and the bottom too uneven to enable them to be drawn with accuracy. 45

Isolated soundings, shoaler than surrounding depths, should always be avoided, especially if ringed around, as there is no knowing how closely the spot may have been examined.

On charts the areas tinted blue indicate shoal and dangerous waters, which should always be navigated with extreme caution. 50

3. **Chart on largest scale always to be used.**—It sometimes happens that, from press of work, only the larger scale chart of a particular locality can at once receive any extensive rearrangement of coastline or soundings. This is an additional reason, besides the obvious one of the greater detail shown on
5 such chart, why largest scale charts should always be used for navigation.

4. **Caution in using Small Scale Charts.**—In approaching the land or dangerous banks, regard must always be had to the scale of the chart used. A small error in laying down a position means only yards on a large scale, whereas on a small scale the same amount of displacement means large fractions of a mile.
10 This is particularly to be observed when coming to anchor on a narrow ledge of convenient depth at some distance from the shore.

For the same reason, bearings to objects *near* should be used in preference to objects farther off, although the latter may be more prominent, as a small error in a bearing or in laying it down on the chart has a greater effect in mis-
15 placing the position the longer the line to be drawn.

5. **Buoys.**—It is manifestly impossible that any reliance can be placed on buoys always maintaining their exact positions. Buoys should therefore be regarded as warnings and not as infallible navigation marks, *especially when in exposed positions*; and a ship should always, when possible, be navigated by
20 bearings or angles on fixed objects on shore and not by buoys.

Light-buoys.—The lights shown by light-buoys cannot be implicitly relied upon.

6. **Lights.**—Circles drawn on charts around a light are not intended to give information as to the distance at which it can be seen, but solely to indicate,
25 in the case of lights which do not show equally in all directions, the bearings between which the variation, or visibility, or obscuration of the light occurs.

All the distances given in the Lists of Lights and on the charts for the visibility of lights are calculated for a height of an observer's eye of 15 feet. The table of distances visible due to height, at the beginning of each List of Lights
30 affords a means of ascertaining how much more or less the light is visible should the height of the observer's eye be more or less than 15 feet. The glare of a powerful light is often seen beyond the limit of visibility of the actual rays of the light, but this must not be confounded with the true range. Again, refraction may often cause a light to be seen farther than in ordinary circumstances.

35 When looking out for a light at night, the fact is often forgotten that from aloft the range of vision is much increased. By noting a star immediately over the light, a very correct bearing may be afterwards obtained from the standard compass.

The intrinsic power of a light should always be considered when expecting
40 to make it in thick weather. A weak light is easily obscured by haze, and no dependence can be placed on it being seen.

Coloured lights are also inferior in power to *white* lights, and are more quickly lost under unfavourable circumstances. In some conditions of the atmosphere, white lights may have a reddish hue. The mariner should not trust
45 solely to colour where there are sectors, but verify the position by taking a bearing on the light. On either side of the line of demarcation, between *white* and *red*, and also between *white* and *green*, there is always a small arc of uncertain colour.

The power of a light can be estimated by remarking its order, as given in
50 the List of Lights, and in some cases by noting how much its visibility in clear weather falls short of the range due to the height at which it is placed. Thus, a light standing 200 feet above the sea, and only recorded as visible at 10 miles

in clear weather, is manifestly of little brilliancy, as its height would permit it to be seen over 20 miles, if of any power. (See table in Lists of Lights previously mentioned.)

The distance from a light cannot be estimated either by its brilliancy or its dimness.

7. Fog Signals.—Sound is conveyed in a very capricious way through the atmosphere. Apart from wind, large areas of silence have been found in different directions and at different distances from the fog signal station, in some instances even when in close proximity to it. The apparatus, moreover, for sounding the signal often requires some time before it is in readiness to act. A fog often creeps imperceptibly towards the land, and is not observed by the people at a station until it is upon them; whereas a ship may have been for many hours in it, and approaching the land. In such a case no signal may be made. When sound has to travel against the wind, it may be thrown upwards; in such a case, a man aloft might hear it when it is inaudible on deck. Under certain conditions of the atmosphere, when a fog signal is a combination of high and low notes, one of the notes may be inaudible.

The mariner should not assume—

- (a) That he is out of hearing, because he fails to hear the sound.
- (b) That because he hears a fog signal faintly, that he is at a great distance from it.
- (c) That he is near it, because he hears the sound plainly.
- (d) That the distance from and the intensity of the sound on any one occasion is a guide to him for any future occasion.
- (e) That the fog signal has ceased sounding, because he does not hear it even when in close proximity.

Taken together, these facts should induce the utmost caution in closing the land in fogs, and the use of the lead should not be neglected.

8. Fixing Position.—The most accurate method of fixing a position relative to the shore is by angles taken by the sextant between well defined objects and laid down on the chart by station-pointer.

Three things are, however, necessary to its successful employment. First that the objects be well chosen; second, that the observer is skilful and rapid in his use of the sextant, and third, that the chart being used is from an accurate survey.

For the first, reference can be had to the pamphlet on the use of the station-pointer, the second can only be obtained by practice. The third can be judged by the data in the title.

In many narrow waters also, where the objects may yet be at some distance, as in coral harbours or narrow passages among mud banks, navigation by sextant and station-pointer is invaluable, as a true position can only be obtained by their means. A small error in either taking or plotting a compass bearing under such circumstances may put the ship ashore.

It is not intended that the use of the compass to fix the ship should be given up; there are many circumstances in which it may be usefully employed, but errors more readily creep into a position so fixed. Angles should invariably be used in all cases where great accuracy of position is desired, such as the fixing of a rock or shoal, or of additions to a chart, such as fresh soundings or new buildings. In these cases angles should be taken to several objects, the more the better; but five objects is a good number, as the four angles thus obtained not only prevent any errors, but they at once furnish a means of checking the accuracy of the chart itself.

Sometimes, when only two objects are visible, a compass bearing and a sextant angle may be used with advantage.

The use of a danger angle in passing outlying rocks with land behind should not be forgotten. In employing this method, however, caution is necessary as should the chart be not accurate, i.e., should the objects selected be not quite correctly placed, the angle taken off from it may not serve the purpose. It should not, therefore, be employed when the survey is old or manifestly imperfect.

In fixing by the compass, it must always be remembered that two bearings only are liable to error. An absolute error may be made in either bearing observed; errors may be made in applying the deviation; or errors may creep in in laying them on to the chart. For these reasons, a third or check bearing of some other object should be taken, especially when near the shore or dangers. The coincidence of these three lines will prevent any mistakes.

In passing near a point of land, or an island or any conspicuous object, the method of fixing by doubling the angle on the bow is invaluable. The ordinary form of it, the so-called "four-point bearing," when the bearing is taken four points on the bow, and on the beam, the distance from the object at the latter position being the distance run between the times of taking the bearings, gives an excellent fix for a departure, but does not ensure safety, as the point, and probably the rocks off it, are abeam before the position is obtained.

Doubling the angle on the bow cannot be used, in its simple form, if there is any tidal stream, current or leeway across the course, that is, if the course made good is not the course steered. If this happens, the observations must be plotted as a running fix.

By taking the bearings of an object when two and four points, three and six points, or any doubled angle on the bow, and the distance made good in the interval, a very good position is obtained at the time of the second bearing—the distance from the object being, as with the "four-point bearing", equal to the distance run. This method has an advantage over those following, in that no tables are necessary for the working out of the distance off at second bearing. Used in conjunction with the Traverse table the distance the ship will pass off the object when abeam can be obtained, as follows:

Taking the degrees, or points, from bow at second bearing as a course, with the distance made good in distance column, in dep. column will be found the distance the ship will pass off when abeam—*provided the course is maintained.*

The advantage of having this knowledge before coming up to a point is obvious.

Another method of obtaining the distance the ship will pass off an object is shown in the following table:

40	Angles on bow	{ Between 22° and 34°				} The distance made good will be distance ship will pass off.
		"	25°	"	41°	
		"	26½°	"	45°	
		"	32°	"	59°	
		"	37°	"	72°	
		"	45°	"	90°	
45		"	45°	"	63½°	The distance made good will be <i>half</i> the distance she will pass off.

A very useful table is here inserted. If two bearings of an object are taken and the distance run in the interval between the two bearings (allowance being made for tide, etc.) is known, this distance, multiplied by the factors in the

DISTANCE OF AN OBJECT BY TWO BEARINGS, AND DISTANCE RUN BETWEEN THEM

Difference in Points Between Course and Second Bearing	Difference in Points Between the Course and First Bearing											
	2		2½		3		3½		4		4½	
3.....	1.96	1.09										
3½.....	1.32	.84	2.42	1.53								
4.....	1.00	.71	1.62	1.15	2.85	2.01						
4½.....	.81	.63	1.23	.95	1.91	1.48	3.25	2.51				
5.....	.69	.57	1.00	.83	1.45	1.21	2.19	1.82	3.62	3.01		
5½.....	.60	.53	.85	.75	1.18	1.01	1.66	1.46	2.44	2.15	3.96	3.49
6.....	.54	.50	.74	.69	1.00	.92	1.35	1.24	1.85	1.71	2.66	2.46
6½.....	.50	.47	.67	.64	.88	.84	1.14	1.09	1.50	1.44	2.02	1.93
7.....	.46	.45	.61	.60	.79	.77	1.00	.98	1.27	1.25	1.64	1.61
7½.....	.43	.43	.57	.56	.72	.72	.90	.89	1.11	1.11	1.39	1.38
8.....	.41	.41	.53	.53	.67	.67	.82	.82	1.00	1.00	1.22	1.22
8½.....	.40	.40	.51	.51	.63	.63	.76	.76	.91	.91	1.09	1.09
9.....	.39	.38	.49	.48	.60	.59	.72	.71	.85	.83	1.00	.98
9½.....	.38	.37	.48	.46	.58	.56	.69	.66	.83	.77	.93	.89
10.....	.38	.35	.47	.44	.57	.52	.66	.61	.77	.71	.88	.81
10½.....	.38	.34	.47	.42	.56	.49	.65	.57	.74	.65	.84	.74
11.....	.39	.32	.47	.39	.56	.46	.64	.53	.72	.60	.81	.67
11½.....	.40	.31	.48	.37	.56	.43	.63	.49	.71	.55	.79	.61
12.....	.41	.29	.49	.35	.57	.40	.64	.45	.71	.50	.78	.55
	5		5½		6		6½		7		7½	
6.....	4.26	3.94										
6½.....	2.86	2.74	4.52	4.33								
7.....	2.17	2.13	3.04	2.98	4.74	4.64						
7½.....	1.76	1.76	2.30	2.29	3.18	3.17	4.91	4.88				
8.....	1.50	1.50	1.87	1.87	2.41	2.41	3.30	3.30	5.03	5.03		
8½.....	1.31	1.30	1.59	1.58	1.96	1.95	2.50	2.49	3.38	3.36	5.10	5.08
9.....	1.18	1.15	1.39	1.36	1.66	1.63	2.03	1.99	2.56	2.51	3.43	3.36
9½.....	1.08	1.03	1.25	1.19	1.46	1.39	1.72	1.65	2.08	1.99	2.60	2.49
10.....	1.00	.92	1.14	1.05	1.31	1.21	1.51	1.39	1.77	1.63	2.11	1.95
10½.....	.94	.83	1.06	.94	1.20	1.05	1.35	1.19	1.55	1.36	1.79	1.58
11.....	.90	.75	1.00	.83	1.11	.92	1.24	1.03	1.39	1.15	1.57	1.39
11½.....	.87	.67	.95	.73	1.05	.81	1.15	.89	1.27	.98	1.14	1.09
12.....	.85	.60	.92	.65	1.00	.71	1.09	.77	1.18	.83	1.29	0.91
	8		8½		9		9½		10		10½	
9.....	5.13	5.03										
9½.....	3.44	3.30	5.10	4.88								
10.....	2.61	2.41	3.43	3.17	5.03	4.64						
10½.....	2.12	1.87	2.60	2.29	3.38	2.98	4.91	4.33				
11.....	1.80	1.50	2.11	1.76	2.56	2.13	3.30	2.74	4.74	3.94		
11½.....	1.58	1.22	1.79	1.38	2.08	1.61	2.50	1.93	3.18	2.46	4.52	3.49
12.....	1.41	1.00	1.57	1.11	1.77	1.25	2.03	1.44	2.41	1.71	3.04	2.15

table, will give the distance the ship is off at the second bearing, and will also give the distance the ship will pass when at her nearest, *i.e.*, when abeam. This table can, of course, also be used to obtain distance from an object abaft the beam and so distance when object was abeam.

Example.—Course, North. Speed 10 knots.

9.00 p.m. observed Tonken Lt. bearing N.N.E. patent log 18.0.

9.30 a.m. observed Tonken Lt. bearing N.E. by E ½ E. patent log 23.0.

Difference between course and first bearing is 2 points.

Difference between course and second bearing is 5½ points.

Distance run in the interval, 5 miles.

Under 2 (difference between course and first bearing) and in line with $5\frac{1}{2}$ (difference between course and second bearing) will be seen the factors .60 and .53. Multiply these factors by distance run.

$\cdot 6 \times 5 = 3.0$ m. distance from lighthouse at 2nd bearing.

5 $\cdot 53 \times 52 = 2.65$ m. distance ship will pass off lighthouse when abeam *provided the course is maintained.*

It must be remembered that distance run, is distance *made good*, and the course must be the same throughout.

10 When the object is abeam the vessel is at her nearest, therefore the smaller of the two results always give the distance off the ship will be, or was, when abeam.

The Radio Position Line.—A number of radio systems of which the principal ones are M/F D/F Radio Beacons, Consol Beacons, Loran, Gee and Decca, are now in general use from which position lines or fixes may be obtained.

15 The accuracy and range which may be obtained from these systems vary considerably; their great advantage over other methods lies in the fact that they can be employed under all weather and visibility conditions, though in some cases the results obtained will vary between day and night.

20 Special receiving equipment is generally required in order to make use of the radio signal, and some systems require special lattice charts or tables for plotting the position lines. Full details of these systems and their coverage areas are contained in Admiralty List of Radio Signals, Volume V.

The mariner should appreciate that with the position-fixing systems the accuracy of a fix will depend on three factors:—

- 25 (i) The distance of the observer from the transmitters.
- (ii) The bearing of the observer from the base line joining the pair of stations which he is using.
- (iii) The angle of intersection of the hyperbolic position lines.

30 It should be apparent from the inspection of any lattice chart that an inherent small equipment error, or a small personal error that may occur at the receiver will cause a geographical error of varying amount according to the observer's position.

35 It is important to realize that accurate equipment is no guard against the vagaries of the propagation of radio waves. The beacons and systems operating on medium and low frequencies are liable to "night error" in areas where the ground and sky waves are received with equal strength; these areas will occur at ranges depending upon the particular frequency used by any beacon or system. Where the transmissions of two stations are synchronised to provide one signal, reading and position line, "night error" will be a minimum along the normal to the base line joining the pair of stations, and a maximum towards the limits of their service sector.

40 Little is yet known about the effects of hills and discontinuities in the terrain (such as cliffs) on the speed of medium and low-frequency radio waves.

45 At the other end of the radio spectrum the transmissions of systems operating on the very high frequencies are subject to distortion in abnormal atmospheric conditions.

Fixing by Radar.—Radar may also be of considerable assistance when navigating in coastal waters in low visibility or at night. It is essential, however, to appreciate the limitations of a radar set when interpreting the information obtained from it. It must be remembered that the radar horizon is only slightly farther than the visual horizon would be, in good visibility, for a height of eye equal to the height of the radar aerial. Hence no echoes will be

received from a coastline lying below the radar horizon, while echoes may be received from high ground farther inland which will give a misleading impression of the range of the nearest land.

Depending on the width of its beam, the bearings from a radar set tend to be inaccurate. It is therefore preferable when fixing by radar to use ranges rather than bearings. It is then most important to consider carefully the identity of the object giving the echo, using the bearing as an indication, and the height of the object to determine whether it will appear on the radar presentation. Radar Range Nomograms are useful in deciding this, but a satisfactory result can be obtained by using "Distance to Sea Horizon Tables".

When two or more objects on the radar presentation have been selected and positively identified, a satisfactory fix can be obtained by striking arcs on the chart with the radar range of the selected objects. These arcs intercept at the ship's position. Best results will be obtained by using isolated objects such as detached lighthouses, rocky islets, and the extremities of long piers or jetties, but where no such objects are available a steep coastline with cliffs should be used. Flat or gently shelving coastlines, such as mud flats or sand dunes, should not be used since it is difficult to identify any portion of them on the radar presentation. Identification is assisted in some areas by fitting objects, such as buoys and beacons, with radar reflectors, causing them to return strong echoes. Attention is drawn to the symbols with which such objects are marked on Canadian Charts, and which are given in the latest edition of Chart No. 1, "Symbols and Abbreviations used on Canadian Hydrographic Service Charts".

The difficulty of positive identification of objects is largely reduced if a Chart Comparison Unit is used in conjunction with the navigational radar. Fixes obtained with this equipment employ, in principle, an infinite number of ranges of the terrain in the vicinity of the ship, and in so doing a satisfactory fix will normally be assured.

In addition, radar beacons are available in some areas. Details of these and their use are given in the Admiralty List of Radio Signals, Volume II.

9. Change or Variation of the Compass.—The gradual change in the variation must not be forgotten in laying down positions by bearing on charts. The magnetic compasses placed on the charts for the purposes of facilitating plotting become in time slightly in error, and in some cases, such as with small scales, or when the lines are long, the displacement of position from neglect of this change may be of importance.

The geographical change in the variation is very rapid in some parts of the world, and should always be taken into consideration.

Therefore when the track between two positions crosses differing lines of variation, compass course must be altered from time to time to allow for the changes due not only to locality, but also to difference of date from that given on the chart.

A variation chart should be consulted on this head and the date and correction to apply to variation (always given in compass roses or in title) be watched.

Caution.—Mariners are warned to guard against the effect of the retained magnetism in ship, due to last course. Even in swinging ship this error is found and it can be readily understood that after steaming or lying with the ship's head in one direction for some time, the result of retained magnetism is strongly felt. In steaming, the constant vibration from the engines settles this induced magnetism and therefore the effect is felt after change of course. The AMOUNT of error due to this cause can only be found by observation, but it is always to be

expected on change of course, and always tends to throw the ship in direction of last course. In instructions for adjustment of Kelvin Compass the following practical rule and caution is given:—

5 Sec. 7. Warning regarding the sluggishness of Ship's Magnetism.

1. After steering for some time on Westerly courses, expect;

(a) Westerly error if you turn to the north.

(b) Easterly error if you turn to the south.

2. After steering for some time on Easterly courses, expect;

10 (a) Easterly error if you turn to the north.

(b) Westerly error if you turn to the south.

Steaming at full speed on the reverse course for a short time undoubtedly gets rid of a great portion of this retained magnetism. This caution emphasizes the fact that observations for error should be taken as frequently as possible and—LOOK AHEAD, not only to the course being steered, but to the course about to be steered and to the possibility of thick weather preventing observations.

Local Magnetic Disturbance of the Compass on Board Ship.—The term "local magnetic disturbance" has reference only to the effects on the compass of magnetic masses external to the ship in which it is placed. Observation shows that disturbance of the compass in a ship afloat is experienced only in a few places on the globe.

Magnetic laws do not permit of the supposition that it is the visible land which causes such disturbance, because the effect of a magnetic force diminishes in such rapid proportion as the distance from it increases, that it would require a local centre of magnetic force of an amount absolutely unknown to affect a compass half a mile distant.

Such deflections of the compass are due to magnetic minerals in the bed of the sea under the ship, and when the water is shallow, and the force strong, the compass may be temporarily deflected when passing over such a spot, but the area of disturbance will be small, unless there are many centres near together.

It is very desirable that whenever a ship passes over an area of local magnetic disturbance, the position should be fixed, and the facts reported as far as they can be ascertained.

35 **10. Use of Oil for Modifying the Effect of Breaking Waves.**—Many experiences of late years have shown that the utility of oil for this purpose is undoubted, and the application simple.

The following may serve for the guidance of seamen, whose attention is called to the fact that a very small quantity of oil skilfully applied, may prevent much damage both to ships (especially the smaller classes) and to boats, by modifying the action of breaking seas.

The principal facts as to the use of oil are as follows:—

1. On free waves, *i.e.*, waves in deep water, the effect is greatest.

2. In a surf, or waves breaking on a bar, where a mass of liquid is in actual motion in shallow water, the effect of the oil is uncertain, as nothing can prevent the larger waves from breaking under such circumstances; but even here it is of some service.

3. The heaviest and thickest oils are most effectual. Refined kerosene is of little use; crude petroleum is serviceable when nothing else is obtainable; but all animal and vegetable oils, such as waste oil from the engines, have great effect.

4. A small quantity of oil suffices, if applied in such a manner as to spread to windward.

5. It is useful in a ship or boat, both when running, or lying to, or in wearing.

6. No experiences are related of its use when hoisting a boat up in a sea-way at sea, but it is highly probable that much time and injury to the boat would be saved by its application on such occasions. 5

At anchor, when the sea is sufficient to render it difficult to hoist up or in boats, oil bags from forward or from the swinging booms have been found to render the sea alongside comparatively smooth.

7. In cold water, the oil being thickened by the lower temperature, and not being able to spread freely, will have its effect much reduced. This will vary with the description of oil used. 10

8. The best method of application in a ship at sea appears to be: hanging over the side, in such a manner as to be in the water, small canvas bags, capable of holding from one to two gallons of oil, such bags being pricked with a sail needle to facilitate leakage of the oil. 15

The position of these bags should vary with circumstances. Running before the wind they should be hung on either bow—e.g., from the cathead— and allowed to tow in the water.

With the wind on the quarter the effect seems to be less than in any other position, as the oil goes astern while the waves come up on the quarter. 20

Lying to, the weather bow and another position farther aft seem the best places from which to hang the bags, with a sufficient length of line to permit them to draw to windward, while the ship drifts.

9. Crossing a bar with a flood tide, oil poured overboard and allowed to float in ahead of the boat which would follow with a bag towing astern, would appear to be the best plan. As before remarked, under these circumstances the effect cannot be so much trusted. 25

On a bar with the ebb tide it would seem to be useless to try oil for the purpose of entering. 30

10. For boarding a wreck, it is recommended to pour oil overboard to windward of her before going alongside. The effect in this case must greatly depend upon the set of the current, and the circumstances of the depth of water.

11. For a boat riding in bad weather from a sea anchor, it is recommended to fasten the bag to an endless line rove through a block on the sea anchor, by which means the oil is diffused well ahead of the boat, and the bag can be readily hauled aboard for refilling if necessary. 35

12. Towing a vessel in a heavy sea, oil is of the greatest service and may prevent parting the hawser. Distribute from the towing vessel forward and on both sides; if used only aft, the tow gets all the benefit. 40

LIGHTS, BUOYAGE AND SIGNAL SYSTEMS

LIGHTS.—All lights in Canadian waters, under the control of the Department of Transport, are maintained in operation whenever navigation in the vicinity is open. Lights used solely as harbour lights are not exhibited when the harbour is closed, although the general navigation may remain open. 45 Fishing lights are maintained only during the fishing season. In any case, where there is reasonable doubt whether the light is required, it is kept in operation.

BUOYAGE.—The following system of buoyage is adopted in Canadian waters:—

Approaching from seaward, all buoys on the **starboard** side of the channel are painted *red*, and, if numbered, marked with even numbers, and must be left
5 on the starboard hand.

Approaching from seaward, all buoys on the **port** side of the channel are painted *black*, and, if numbered, marked with odd numbers, and must be left on the port hand.

Numbers, when used, are in consecutive order commencing from seaward.

10 Buoys painted *red* and *black* in horizontal bands mark **middlegrounds** and are left on either hand.

Buoys painted *white* and *black* in vertical stripes mark **mid-channel**, or the **fairway**, and may be passed on either hand. These buoys are rarely used.

15 Pillar, light, bell, and whistle buoys mark special positions, a detailed description of which is given when the mark is first established.

Conical buoys, when used, are always on the starboard side of the channel; conical topmarks on starboard hand buoys, and cylindrical topmarks on port hand buoys. All starboard hand spar buoys have pointed tops and all port hand spar buoys have flat tops; otherwise the shapes of buoys have no special
20 significance at present.

The rule for colouring buoys is also applicable to beacons and other daymarks, so far as it may be practicable to carry it out.

The spar buoys in the rivers are swift current buoys, ballasted with iron rings to keep them upright.

25 **Caution.**—Buoys marking outlying dangers, owing to their exposed positions, are always liable to break adrift or to other accident; therefore, implicit reliance should not be placed on their being in position.

Buoyage Season.—Buoys in Canada are, generally speaking, maintained in position during the season of navigation. In localities where the lights are
30 maintained in operation throughout the year, the buoys are always kept in position. In districts where navigation is closed in winter, the buoys are kept out in autumn until the last vessel has cleared, or as late as the ice will allow, with due regard to their safety. The buoys are replaced in the spring, as soon as the ice will permit.

35 **CAUTION.—Damaging Aids to Navigation.**—Masters of vessels who injure, alter, or make fast to any aid to navigation, render themselves liable to a fine of \$200. Any master of a vessel who, through unavoidable accident, has displaced any aid to navigation, must give notice of the same to the nearest Customs officer, or be liable to a fine of \$50.

40 In some localities, the United States Government is gradually replacing wooden spar buoys with steel conical and can buoys. These buoys constitute a marked improvement over the wooden spars formerly used and represent a considerable investment. Their life should be indefinite unless damaged by collision or lost. Masters of vessels are cautioned that fouling these steel buoys,
45 which are moored with three-quarter-inch chain, will not only result in damage to the buoy with resulting expense of repairs chargeable to the responsible vessel, but also might readily be the cause of damage to the vessel, should the chain become entangled in the propeller.

WRECKS.—Buoys, and the top sides of vessels used for marking wrecks, are painted *green* with a white inscription, and moored, when possible, near the side of the wreck next to mid-channel.

Wreck-marking vessels exhibit:—

By day.—Three balls from a yard, 20 feet (6^m1) above the sea; two placed 5
vertically on the side that shipping may safely pass and one on the other side.

By night.—Three *fixed white* lights, similarly arranged; the ordinary riding light is not shown.

Mariners must pass on that side of a wreck-marking vessel on which the 10
two balls or two lights are shown.

SIGNAL SYSTEMS

Government Stations for Communication with Shipping.—The Government of Canada has in operation a system of communication between the shore and vessels navigating the waters adjacent thereto.

Radio Aids to Navigation Service.—For full details mariners are 15
referred to the Special Notice to Mariners "Radio Aids to Marine Navigation" published early in the spring of each year; additions or alterations to the same will be contained in regular Notices to Mariners.

Radio Coast Stations on the Great Lakes are maintained at Cornwall, Kingston, Toronto, Welland Canal (Guard Lock No. 7), Port Burwell, Point 20
Edward, Midland, Sault Ste. Marie, Sault Ste. Marie Canal (Lock 2), Burlington Canal Bridge, and Port Arthur. These stations also transmit weather forecasts and reports respecting dangers to navigation.

Messages to and from any of the radio stations pertaining to weather conditions and forecasts, and reports on aids to navigation will be handled 25
without charge.

Radio Beacons are located at Main Duck Island, Gibraltar Point, Burlington Bay and Port Weller, Lake Ontario; Port Colborne, Long Point and Southeast Shoal, Lake Erie; Goderich and Cove Island, Lake Huron; Owen Sound, and Hope Island, Georgian Bay; Gros Cap light, Caribou Island, 30
Michipicoten Island, Michipicoten Harbour, Slate Island and Angus Island, Lake Superior.

United States Radio Beacons are maintained on Lake Huron at Lake Huron lightship, Harbour Beach light, Port Austin, Gravelly Shoal, Alpena light, Thunder Bay Island light, Poe Reef light, Round Island Passage light, 35
Mackinac Island, Old Mackinac Point light, St. Ignace and Detour Reef light.

On Lake Superior at: Whitefish Point, Marquette, Presque Isle Harbour, Huron Island, Manitou, Eagle Harbour, Keweenaw, La Pointe, Devils Island, Superior Entry, Duluth, Two Harbours, Rock of Ages, and Passage Island.

Radio beacons are most valuable fog signals and are also available for 40
navigation in clear weather. Pursuant to an agreement between the competent administrations of the United States and Canada, certain general principles have been adopted which provide for the co-ordinated operation of the radio beacon systems of the two countries.

Normally, the stations operate in groups of three, each station in a group 45
using the same frequency and each station transmitting in its proper sequence, but, in order to provide for future expansion, some stations will operate singly and others in pairs for the present. The characteristic of each station consists

of a distinguishing code letter, which is repeated three times, followed by one, two, three or four dashes as given in the Special Notice to Mariners, "Radio Aids to Navigation", already referred to.

In clear weather, each station transmits its characteristic for three periods of one minute, separated by silent intervals of two minutes. Transmissions commence as shown in the Special Notice to Mariners.

Whenever the atmosphere in the vicinity of the station is so obscure, as to impede navigation, the radio beacon will operate continuously, maintaining the uniform time cycle of three minutes.

For like reasons, radio beacons in other areas may also be operated occasionally on non-advertised schedules upon special request from Air Services.

Synchronized Radio Beacon and Fog Alarm.—At certain stations the radio signal is synchronised with the fog alarm for distance finding.

Whenever the fog alarm sound signal is operating at this station, a group of two radio dashes, short and long, one second and five seconds, respectively, is transmitted at the end of the radio beacon minute of operation. (These dashes are easily identified by reason of the fact that they are lower in pitch than the regular characteristics of the radio beacon).

A group of two sound signal blasts of corresponding length is sounded by the fog alarm at the same time, so that when within audible range of the sound signal, navigators of vessels with radio receivers capable of receiving the radio beacon signals may readily determine their distance from the station, by observing the time in seconds which elapses between hearing any part of the distinctive group of radio dashes (say the end of the long dash), and the corresponding part of the group of sound signals from the fog alarm, and dividing the result by 5 for statute miles. The error of such observations should not exceed 10 per cent. The one-second radio dash preceding the long dash, and the corresponding one second blast of the fog alarm, are a standby or warning signal and serve as an identification signal to assure the observer that he is taking time on the correct signal blast. For observations on these signals, a watch with a seconds hand is all that is required, although a stop watch is more convenient. Observations for distance off at these stations are not restricted to vessels with direction finders but may be made by any vessel having a radio receiver capable of receiving on the appropriate beacon frequencies. A loud speaker is desirable although not necessary.

The following is an example of the use of these synchronized signals at Cove Island: If the interval between hearing the end of the five-second radio dash, marking the end of the radio beacon minute, and the end of the long (5-second) blast of the fog alarm is thirty seconds, the observer is 30 divided by 5=6 miles from Cove Island fog alarm.

Hearing the group of short and long radio dashes with the low pitch note is an indication that there is fog at the station and that the fog alarm is operating.

Special Operation of Radio Beacon Stations for Calibration of Direction Finders.—United States radio beacons will broadcast for the purpose of enabling vessels to calibrate their radio direction finders upon request. If it is not practicable to determine the time of calibration sufficiently in advance to contact the District Commander, or if the calibration is desired from a remote station, where communication is difficult, request may be made directly to the attendant of the station by means of telephone, telegraph, or a whistle signal consisting of three long blasts followed by three short blasts, this whistle signal to be repeated until same is acknowledged by the attendant through the starting of the transmitter. The same group of signals will be sounded at the termination

of the calibration. If attention of station or lightship is not attracted by the whistle signals, hoist the international code signal, J over K, to indicate for radio direction finder calibration.

The work of a station attendant is not confined to standing watch and there may be times when the whistle request for calibration is not immediately heard, due to the noise from operating station machinery, etc. Usually, a repeated signal not too far from the station will attract the attention of keepers.

Transmission for calibration purposes will be continuous without the 2-minute silent interval, unless another station in the same frequency group is in operation at the time. No continuous transmission for calibration will be undertaken during regular schedule periods of operation.

Radio Beacon Charts of the Great Lakes.—These charts, published by the United States Coast Guard for the Great Lakes and other waters, are convenient for quick reference. They are issued to vessels on request addressed to the Commander, 9th Coast Guard District, Cleveland 15, Ohio, or to the Commandant, U.S. Coast Guard, Washington, D.C.

Caution.—The attention of mariners is directed to the serious dangers which may arise from the misuse of radio fog signals, and particularly to the risk of collisions with light-vessels operating such signals. The vagaries of sound in fog are well known and warnings regarding fog signals are embodied in the Sailing Directions and Light Lists. The mariner, who in thick weather approaches a radio fog signal directly ahead on a radio bearing and relies on hearing the fog signal in sufficient time to alter course to avoid danger, is taking an unjustifiable risk.

Radio fog signals give no indication of distance off and safety demands that every precaution should be taken. If such signals are carried on light-vessels, risk of collision can be avoided by ensuring that the bearing does not remain constant.

Interference to Direction-finding Equipment.—It is pointed out to masters of ships fitted with direction-finding equipment, particularly those using unshielded direction-finding loops, that serious error may result in bearings taken if, after calibration, broadcast receiving aerials are erected in proximity to the direction-finding equipment.

MARINE SEARCH AND RESCUE SERVICES.

The RCAF has been designated as the agency for co-ordinating all marine search and rescue services, for cases of marine distress on the east and west coasts of Canada, and the approaches thereto and on the Great Lakes. Such co-ordination is handled by Rescue Co-ordination Centres at Halifax, N.S., Trenton, Ont. and Vancouver, B.C.

In cases of marine distress, where assistance is required, a message is to be sent directly to the RCAF Rescue Co-ordination Centre concerned giving full details of the nature of the distress and stating what assistance is required.

The address of the RCAF Rescue Co-ordination Centre for the Great Lakes area is:

Rescue Co-ordination Centre,
RCAF Training Command Headquarters,
Trenton, Ont.

Fire Warning Signal by Vessels in Canadian Ports.—In the event of fire occurring at a wharf at which any vessel is moored, or on board any vessel whatever (except a vessel under way), such vessel shall give *five* blasts of from *four to six seconds* duration each, as an alarm to indicate such fire. This signal shall be repeated at intervals, and shall be used in addition to, but not in substitution for, other means of reporting a fire, and shall not be used for any other purpose.

Separate Steamer Lanes for Vessels.—The Lake Carriers' Association and the Dominion Marine Association have prescribed, for vessels enrolled in the associations, the following separation of routes for upbound and downbound traffic in Lake Huron:

Downbound vessels shall lay a course from Detour Passage to pass not less than 15 miles northeast from Middle Island light, thence not less than 12 miles east-northeast of Harbour Beach light.

Downbound vessels from the Straits of Mackinac shall lay a course 070° for 6 miles from a point south of Poe Reef, then shall lay their course to join the regular downbound course from Detour at a point not less than 15 miles northeast of Middle Island light.

Downbound vessels from Calcite, from a point abreast of Adams Point light-buoy, shall lay a course about 100° to intersect the westerly limit of the general downbound course at a point about 15 miles northeast of Middle Island light.

Downbound vessels from Alpena shall head on Harbour Beach light to a point 12 miles above Pointe aux Barques light, thence haul about southeast to cross upbound traffic and reach the outside lane.

Upbound vessels on Lake Huron shall lay a course to pass not over 5 miles east-northeast of Harbour Beach light and not over 7 miles 071° off Middle Island light.

Upbound vessels on Lake Huron bound for Straits of Mackinac shall lay a course for Poe Reef Passage from a point not over 5 miles 050° from Presque Isle light to abreast of Cordwood Point light-buoy.

Eastbound vessels from Round Island Passage shall lay a course 090° to a point about $4\frac{1}{2}$ miles off Martin Reef; thence to a point three-quarters of a mile southeast of Detour light.

It is understood that masters may exercise discretion in departing from these courses when ice and weather conditions are such to warrant it. The courses are designated on the general chart No. 2200, Lake Huron.

It is recommended that the following limit of anchorage be observed in Lake Huron, off Detour light, so that vessels may enter or leave Detour Passage in time of congestion due to fog or other conditions: No vessel to anchor east of a bearing on Detour light of 340° or closer than three-quarters of a mile to the light or north of the Detour Martin Reef course.

LAKE SUPERIOR

Downbound vessels from Port Arthur and Fort William Kaministiquia River Entrance shall take departure from a point not more than half a mile 047° from Welcome Island light, and shall lay a course 137° for 9 miles to a position not less than $2\frac{1}{2}$ miles 227° from Thunder Cape.

From Mission River Entrance, vessels shall take departure from the Breakwater Pier light, and shall lay a course of 110° for $2\frac{1}{2}$ miles; thence 118° for 8.94 miles to a position not less than $2\frac{1}{2}$ miles 227° from Thunder Cape.

Vessels shall now lay a course $097\frac{3}{4}^{\circ}$ for 26.2 miles, passing not less than 2 miles 187° off Thunder Cape and passing not less than $1\frac{3}{4}$ miles 187° from Trowbridge Island light in order to pass not more than $2\frac{1}{2}$ miles off Blake Point light abeam; thence $121\frac{1}{2}^{\circ}$ for 2.1 miles to a point not less than one mile 211° from Passage Island light; thence 148° for 15 miles; thence 119° for 174.88 miles to a point not less than $2\frac{1}{2}$ miles 030° from Whitefish Point; thence joining the present Lake Carriers' Association downbound course to Ile Parisienne. 5

Upbound vessels for Fort William and Port Arthur shall take departure from a point $\frac{5}{8}$ mile 270° from Gros Cap Reef light; thence steer 360° for $2\frac{1}{4}$ miles; thence head on Whitefish Point light 317° for 8 miles to a point $1\frac{1}{2}$ miles 230° from Ile Parisienne light; thence 340° for 13 miles to a point 6 miles 065° from Whitefish Point light; thence $300\frac{1}{2}^{\circ}$ for 191.25 miles to a point not more than half a mile 211° from Passage Island light; thence 310° for 3 miles; thence 277° for $26\frac{1}{4}$ miles, passing not more than three-quarters of a mile 187° from Trowbridge Island light, not more than 1 mile 187° off Thunder Cape and not more than three-quarters of a mile 187° off Hare Island buoy; thence $319\frac{1}{2}^{\circ}$ for 8 miles to pass not less than $1\frac{1}{4}$ miles 048° from Welcome Island light; thence to destination. 15

Vessels bound for Mission River Entrance, from the position not more than three-quarters of a mile 187° off Hare Island Buoy, shall lay a course 292° for 8 miles; thence 290° to destination. 20

Vessels upbound to other points on the north shore of Lake Superior shall follow the courses as laid down from the Gros Cap Reef light to the position 6 miles 065° from Whitefish Point light; thence to destination.

METEOROLOGY OF GEORGIAN BAY

Occasional Thickness of Ice.—Near Cabot Head in the spring of 1888' fields of hummocky ice were encountered 4 to 6 feet above the water in places, which would give them an additional depth under water of from 20 to 30 feet. The master of a vessel should, therefore, by night or in foggy weather—so common in the spring—be careful to avoid striking these masses. 25 30

Fogs.—These are most frequent in the month of May and early part of June. At other times, a fog lasting more than an hour or two in the morning is a rare occurrence.

The cause of their frequency, in the early summer months, is no doubt owing to the condensing effect the cold weather has upon the aqueous vapour contained in the winds with any southing in them. As soon as the lake water warms up to the temperature of the atmosphere, the fogs cease. 35

The converse of this principle, though on a much smaller scale, may be seen in autumn when the water is warmer than the air. For a few hours in the early morning with cold northerly winds, the moisture rising from the warm water is condensed by the cold winds. 40

Summer Thunderstorms.—These may be divided into two classes, those accompanied with, and those without wind; as the latter do not much affect the master of a vessel, no more need be said about them, except the difficulty of telling whether a threatening bank contains wind or not. In a sailing vessel or steamer of small power near a lee shore, it is best to be on the safe side and make an offing. 45

Those with much wind usually take an arched shape and advance rapidly from the west. As these summer squalls are local, and not part of any general atmospheric disturbance, they are of short duration, and not preceded by a 50

falling barometer, though during a quick succession of very violent thunderstorms, a remarkable perturbation of the barometer sometimes takes place, which, however, is of more scientific interest than of practical utility to the mariner.

Winds.—Every locality is influenced in its meteorology by its surroundings, and no doubt each lake has its bias—so to speak—in favour of certain directions of wind, but in the northern hemisphere from the Rocky Mountains to Europe including the lakes, a general system of wind circulation prevails.

That is to say, given a considerable area of low pressure, there is a tendency for that area to move in a direction more or less easterly, the area itself taking a somewhat elliptical or curvilinear shape, and causing winds from localities of a higher barometric pressure to flow not quite round the position of the lowest barometer, but to incline about two points (20 to 30 degrees) within the tangent, and while the whole area affected is moving in a more or less easterly direction, it is also revolving round the area of lowest barometer in a direction opposite to that of the hands of a watch—a dust whirlwind at a street corner on a large scale.

The two classes of storms which bring wind and rain to the lakes are first, those which come from the Gulf of Mexico, and, secondly, those originating in the Rocky Mountains, and paradoxical as it may sound to those shipmasters whose opportunities have not led them in the way of studying wind circulation, storms do not always approach from the quarters whence the wind blows.

The effect in Georgian Bay of a storm, whose centre is coming up along the Atlantic Coast from the West Indies or Gulf of Mexico, is to give strong winds northward of east, fining off from the north; but the class of storms of more concern—because of more frequent occurrence—to the lake mariner, is that which sweeps over the continent from the west.

These again may be divided into two classes, those whose centres—in regard to Georgian Bay—pass south, and those whose centres pass north of the bay. From the records at the observatory, Toronto, a large majority of the storm centres pass north of Georgian Bay.

The effect of the storm centre passing south is to give winds more or less easterly accompanied with rain, the wind veering through north, and clearing up from the northwest.

The common type of storm in Georgian Bay, however, is that of which the centre passes northward. The effect of this is to give winds from a direction between south and southeast, usually setting in with a bright sky and a high glass. The barometer falls, the temperature rises, the wind increases, the fiery looking cirrus clouds change gradually to an overcast sky, rain falls and increases as the southeasterly wind fades away. There is now a calm with heavy rain and the glass at the lowest.

The duration of this position of things varies according to the position and diameter of the calm storm centre, but a faint lighting up in the west, at last shows that though the wet portion of the storm is over, the heaviest portion of the wind is about to come. The wind then commences from some point between southwest and north and blows a dry gale with force and duration proportionate to the fall of the barometer.

The knowledge that these shiftings of the winds are systematic will strengthen the lake mariner's personal experience that in an anchorage, which only affords shelter from easterly winds, he should be ready to quit in good time before the change, and as these changes occur very suddenly if the centre passes close to the locality, the master of a vessel should avoid anchorages open to the west, and in ill-found craft, postpone his departure from port at the

commencement of a gale unless he has reason to believe that his present favourable southerly and southeasterly wind will take him to a position, where he may derive shelter from the westerly phase of the gale when it overtakes him.

Captain J. G. Boulton's observation of the usual conduct of the storms in Georgian Bay more than once enabled the *Bayfield* to cross from the northeast shore to Owen Sound at the commencement of a gale, knowing that even in the thick weather and rain generally accompanying it, the high land in that vicinity with its deep and clean shores could be approached with confidence, and so avoid the gale proper from the westward. 5

The above is the usual phase of autumn gales, but sometimes there is a lull and clear up, and the storm apparently over with no westerly wind, and the master of a small craft, fishing boat or heavily laden vessel without a barometer, would put to sea without expecting the westerly portion of the gale which often comes on with the suddenness of a squall, but, unlike the latter, continues. 10

Barometer.—Captain J. G. Boulton having kept a graphic record of the movements of the barometer continuously between 1884 and 1892, accompanied by other meteorological phenomena, and moreover, having his vessel and open boats generally in exposed localities, necessarily paid a great deal of attention to the state of the barometer and its use in foretelling the weather. 15

The conclusion arrived at was, that as a foreteller of the weather it is, by itself, of no service in an isolated position as the master of a vessel naturally is; that is to say, a gale may commence with any condition of his glass. In summer time, it is not unusual to have for three or four days a low glass standing between 29.10 and 29.20 attended by calm and bright weather. 20

But closely watched, in conjunction with the wind and rain at the time, it is very valuable; for instance, in August (a doubtful month) rain sets in at midnight and continues with little or no wind; the master of a vessel looks at his glass as the night passes on, and finds it steady, perhaps rising. During the forenoon as he anticipated, the clouds quickly disperse; the unaltered condition of the barometer shows there is no general atmospheric disturbance. 25 30

If, on the other hand, he finds the glass falling and the wind in the south-east quarter, he may rest assured it will result in more than a quiet rain, and the depth to, and velocity with which the glass falls will be the measure of what he may expect, eventually, from the west.

It is usual, in the early part of October, to have a week of continuous very fine weather, accompanied by light southerly winds. 35

The barometer here again is very serviceable, for as long as it is high and steady with no threatening appearance in the sky, the fine spell is likely to continue. The summer months of June, July, and the first half of August are usually accompanied by a steady glass, but in autumn the barometer alternates from very high to very low, and vice versa. In well developed cyclonic storms, such as prevail in the autumn, the connection between the changes of wind and time of day is not so pronounced as in merely strong breezes and even moderate gales. 40

Captain Boulton observed that easterly winds (that is to say winds from any point eastward of north and south) preponderate in Georgian Bay at night, westerly winds by day; a favourite time for the westerly portion of the gale to set in being the forenoon and was of opinion that a small craft crossing Georgian Bay would make better and safer passage between 2 and 8 o'clock a.m. than at any other time 45 50

Currents.—The main current passes down the west shore of Lake Huron and up the east side entering Georgian Bay. There is also a return current to the westward, some distance off Manitoulin Island.

GENERAL DESCRIPTION—LAKE HURON

Lake Huron, including Georgian Bay, North Channel, and St. Mary's River to Sault Ste. Marie, has a total area of 23,010 square miles, 13,900 of which are in Canadian territory. It has a total local drainage area of 72,420 square miles, 47,570 being in Canada. The average rainfall has been computed as 31 inches per annum. The greatest distance in the clear, Grand Bend to Point Detour, is 210 miles; the steamer track from Point Edward to Point Detour is 220 miles, and to the Straits of Mackinac, 243 miles. The lake is 101 miles in its greatest width, Thunder Bay to Stokes Bay, about latitude $44^{\circ} 58'$ North; 750 feet, the deepest recorded sounding (169 feet below mean sea-level) is about latitude 45° north and longitude 82° west. Generally speaking, the water is deep. The eastern and northern shores, however, including Manitoulin, Duck, Cockburn, and Drummond Islands, have shoal water extending off three miles in places, but a berth of five miles will ensure safe passage.

Georgian Bay to the northeastward of, and separated from Lake Huron by the Bruce (Saugeen) Peninsula and several islands and shoals to the northward of it, through which good channels exist, is 125 miles long in a northwest and southeast direction, and about 55 miles in greatest breadth near its middle. Generally speaking, the northeastern and northern shores of the bay are much broken up by inlets and flanked by many islands and shoals, but the southwest side is generally deep, and indented by several large bays. The deepest recorded sounding of 540 feet (or 41 feet above mean sea-level) is a short distance off the north shore of the Bruce Peninsula.

The so-called North Channel of Lake Huron extends from the northwest corner of Georgian Bay at Badgeley Island to St. Joseph Island, passing to the northward of Manitoulin Island.

Lake Huron is a connecting link in the chain of the Great Lakes, which receives the waters of Lake Michigan through the Strait of Mackinac, and those of Lake Superior by way of the St. Mary's River, and discharges its supply into Lake St. Clair through the St. Clair River. The depth of water prevailing in these two rivers, and at the Limekiln Crossing in the Detroit River, originally about 13 feet, has always limited the size and draught of vessels navigating Lake Huron to and from Lakes Superior and Erie. The improvement of the ship channel connecting the waters of the Great Lakes has permitted the introduction of larger vessels, with corresponding increased draught, which can pass with safety and speed through Lake Huron.

The present adopted low water datum for Lake Huron and Georgian Bay is 578.50 feet above mean sea-level as referred to the Lake Survey datum of 1903 adjustment. The mean lake surface elevation for the period 1860 to 1951 inclusive was 580.57 feet above mean sea-level, 21.72 feet below the mean elevation of Lake Superior and 8.23 feet above the mean elevation of Lake Erie. The discharge of Lake Huron, at the above mean elevation, through the St. Clair River, is approximately 198,000 cubic feet per second.

The season of navigation is, generally speaking, from April 12 to December 15.

LAKE LEVELS.—The elevation of the lake is never constant being subject to the following agencies, mechanical and natural:—

Mechanical.—The lowering of the surface due to improvements which deepen the natural outlet. Regulation of Lake Superior holding back, or augmenting, the natural supply. Loss sustained by diversion from the natural watershed. Gain obtained by diversion into the natural watershed.

Natural.—The general fluctuation of the lake due to precipitation and evaporation over the drainage area whether normal, excessive, or sub-normal, may be considered under the following headings: Annual, Monthly or Seasonal, Daily and Irregular.

Annual.—From year to year the mean elevation varies in accordance with the relation of supply and discharge, natural or otherwise. The maximum average annual elevation in the 94 years (1860–1953), was 583.68 feet above mean sea-level in 1886, and the minimum average annual elevation was 577.71 feet in 1934, giving a maximum range of 5.97 feet in the annual elevations.

Monthly or Seasonal.—During each month, and season, the elevation is constantly changing, attaining a maximum during the summer and a minimum during the winter. During the past 5 years the maximum monthly elevations ranged from 4.19 feet above to 1.24 feet above the low water datum, i.e. 578.50 feet above mean sea-level. During the same period the minimum monthly elevations have ranged from 2.98 feet above to 0.26 of a foot below the low water datum, the greatest seasonal range in a calendar year being 2.23 feet and the least being 0.36 of a foot.

Daily.—The mean level each day changes first, regularly in relation to the monthly or seasonal range, and secondly, irregularly as a result of physical forces contributed by the winds, barometric pressures and lunar influences.

Irregular.—The lake surface is never at rest, even during the calmest of weather, and large scale sensitive recording gauges register continuous irregular oscillations referred to as “seiches”. The barometric pressure may be constant in the vicinity of a recording station, while an area or areas of lower or higher pressure may be passing or prevailing over distant sections and thus affecting the whole surface of the lake. The range and time interval of seiches vary, being governed by the configuration of the shoreline and offshore depths; thus at the apex of a bay, with a wide mouth, the seiche range will be greater than at the entrance, the reverse being observed in large bays with restricted entrances, the seiche range then being greater at the narrowest section. Generally speaking, a pronounced increase in the normal seiche range precedes a storm approaching from offshore. The wind contributes a second irregular action by forcing the surface water to pile on to the lee shore faster than the undercurrents can return the volume to windward. The range of piling will also vary in relation to the shoreline configuration and offshore depths. Secondary undulations in the piling occur in relation to the variations in the force or velocity of the wind. It is usually noted that the rise in elevation, due to this piling of the water on to the lee shore, reaches its maximum and starts to recede at a considerable interval of time before the peak, or maximum velocity, of the wind has reached the point of observation.

On July 16, 1931, starting at 0430, a major seiche, or oscillation, of the water-level was recorded by the self-registering gauge located at the downstream end of the Northern Navigation Company's wharves, in the St. Clair River at Point Edward, Ont. The seiches were without doubt due to areas of sharp variation in barometric pressure, over the lower end of Lake Huron, preceding a violent wind and electric storm which passed over the vicinity of the St. Clair River during the following night. The water-level rose $18\frac{1}{2}$ inches in thirty minutes; then receded 46 inches in one hour and forty-five minutes, followed by a rise of 36 inches in forty-two minutes. The main seiche was followed by three undulations of 18-inch average range at intervals of about three hours from crest to crest or from trough to trough. The oscillations then reduced to a range of about 6 inches, with intervals of two to three hours between crests, until 2000,

July 17. The range then again increased to an average of 12 inches till about 0800 July 18, after which the actions gradually reduced to the normal irregular range of a few inches peculiar to this location. During the two days of July 16 and 17, the wind at Point Edward and Goderich was reported as light south
 5 and at Port Lambton, twenty-five miles downstream, the weather was reported as calm on both days. The rise and fall of water-level carried down the St. Clair River taking approximately one hour and six minutes for each high or low seiche to cover the twenty-five miles to Port Lambton. During the period of travel, the range of the major seiche was reduced from 46 inches to 16 inches,
 10 a ratio of approximately 3 to 1.

In 1906, the Canadian Government first conducted observations on the Great Lakes, using large scale self-registering graphic gauges for precisely recording the normal fluctuations and irregular oscillations in the water surface elevations. At Goderich, Collingwood, and Thessalon, three such observation stations are
 15 now maintained from which continuous records are available for Lake Huron and Georgian Bay.

Low Water-levels Affecting Canadian Charts.—Mariners are cautioned to observe that the soundings shown on various charts of Lake Huron and Georgian Bay are in most cases for the actual depths found at the time of the surveys;
 20 and the depths are given as corresponding to the lake levels of those years.

In recent years these levels have sometimes fallen considerably below the low water datum on some of these charts; for instance, in the month of November, 1934, the waters of Lake Huron and Georgian Bay dropped to a new low level, three-tenths of a foot below the previous lowest recorded level for the month,
 25 and one foot lower than the present adopted low water datum of 578.5 feet.

Mariners, in consequence, when using any particular chart should make a reduction or subtract from the sounded depths given on it, a sufficient number of feet corresponding to the difference between the low level or elevation at the time of the survey and that of the present. Elevations or lake levels for the
 30 year of the survey are given in the title of the chart.

Latest recorded elevations for the lake are given in the monthly and annual bulletins issued by the Canadian Hydrographic Service.

WARNING TO MARINERS

The following examples of how the seasonal variations in the water surface
 35 level of Lake Huron and Georgian Bay should be reckoned with when referring to harbour and channel depths and in all critical areas shown on the charts, will serve to illustrate the importance and necessity of reading carefully all the information printed in the title and elsewhere on a chart.

In finding the actual depth in, for example, the record low level month of
 40 November, 1934, in using Canadian charts, the following practice should be adopted:—

	Charts Nos. 2272, 2200, 2291, 2293, 2294, 2211.	<i>Subtract at least 1 foot.</i>
	“ Nos. 2290, 2292.	<i>Subtract at least 2 feet.</i>
	“ Nos. 2283, 2284, 2289, 2297, 2298, 2216.	<i>Subtract at least 3 feet.</i>
45	“ Nos. 2282, 2288, 2295, 2299, 2201.	<i>Subtract at least 4 feet.</i>
	“ No. 2281.	<i>Subtract at least 5 feet.</i>
	“ Nos. 2285, 2286, 2287, 2296.	<i>Subtract at least 6 feet.</i>

GENERAL DESCRIPTION—LAKE SUPERIOR

Lake Superior is the largest of the Great Lakes, and one of the greatest expanses of fresh water on the globe. Its chief characteristics are deep water and high, bold, rocky shores along a great part of the coast. Compared with the other Great Lakes, it is more elevated above the sea, has deeper and colder water, more fog and ice, a shorter season of navigation, less rain, more snowfall, winds little different and seas or waves much larger and longer, comparing very closely with those to be encountered in Hudson Bay. The longest steam track from Duluth Canal to the head of St. Marys River is 383 miles, and in a straight line from Duluth Canal to Michipicoten Harbour, is some 350 miles. The breadth, about Longitude $86^{\circ} 45'$, is 160 miles. The distance from Gros Cap Reef to Port Arthur is 247 miles and to Fort William 246 miles.

Area in square miles: Water surface of lake, 11,110 Canada; 20,710 United States; total 31,820.

Entire drainage basin: 42,560 Canada; 37,440 United States; total 80,000.

Maximum depth recorded by the United States Lake Survey, 1,302 feet.

Annual average rainfall, 29 inches.

The adopted Low Water Datum is 601.6 feet above Mean Sea Level, and approximately 23 feet above the mean surface elevation of Lake Huron.

Fluctuation of Water Level.—Through joint action on the part of Canada and the United States, the fluctuation of Lake Superior is being regulated by compensation works located in the St. Marys River at the head of the St. Marys Falls, which consists of dikes and sluice gates so operated as to vary the volume of discharge from the lake. The purpose of this regulation is to neutralize the changes in flow consequent upon diversions of water around the rapids for power development, and to limit the fluctuation of the lake surface, within a range between the elevations of low-water datum and 2 feet above that datum.

WEATHER

The predominating winds are from the northeast on the west half of the lake intensified somewhat in the extreme western portion, and from the northwest on the east half. The directions of the winds with highest velocities vary from west-southwest through north to northeast. The natural route of United States commerce near the southern side lies, therefore, throughout its whole extent, along a lee shore. During storms, the water rises less on the lee shore and falls less on the weather shore than it does on the shoaler lakes, as the greater depth of water allows the lower return currents to flow more freely. During the summer months the perils of navigation are mainly those of fog and squall winds, the latter occurring frequently in connection with thunderstorms. In the spring and fall, the lake is foggy, stormy, and dangerous. The maximum wind velocity, as derived from long-time records of the United States Weather Bureau for certain shore stations, is 68 miles per hour; the shore-station values are subject to the condition that the free flow of the wind is diminished by land friction. The maximum velocity as observed on anemometer-equipped vessels while more than 6 miles off-shore was 93 miles per hour on June 25, 1952; but such records began in 1941 and self-recording data over a long period, which might register higher winds, are not available. The maximum wind velocity at Caribou Island, as derived from records of the Meteorological Division of the Department of Transport, is 71 miles per hour; this value being speed sustained for one hour and not representing gusts which may have been much higher.

The area of greatest frequency of fog, according to the reports of the United States Weather Bureau, is east of Keweenaw Point and northward of Au Sable Point, a district almost coincident with that of lowest water temperatures. Less fog is reported on the coast from Au Sable Point to Marquette and Portage Entry.

Magnetic Attraction.—Local magnetic attraction, or disturbance of the compass needle, is more prevalent than on the other lakes. Reports of vessel masters agree that it is strongest at particular localities along the north shore, that it decreases in intensity as the distance from this shore increases, and that the tendency is to draw upbound vessels in toward the north shore.

Masters of vessels have reported points of large magnetic disturbance as follows: Grand Marais, Pigeon Point, Pie Island, Welcome Islands, Thunder Cape, Point Porphyry, Magnet Island, Pic Island, and Peninsula Harbour, the disturbance being reported as great as 40° to 50° at Magnet and Pic Islands.

15

GENERAL ICE CONDITIONS

The average thickness of ice on Lake Superior, during the winter, is about 44 inches. The lake does not freeze over, only the bays and harbours. At the southwest end, the lake is frozen from Duluth out to about 2 miles past Two Harbours and Thunder Bay and sometimes across to Isle Royale.

20

Heavy wind-rowed ice (ice piled up by the wind until of considerable thickness, 15 to 20 feet, and cemented together by the frost) will be encountered in Whitefish Bay and the head of the lake. It is useless to force a passage through this ice, if the wind is on shore, because the ice flows close up as quickly as opened up and leave no passage for ships.

25

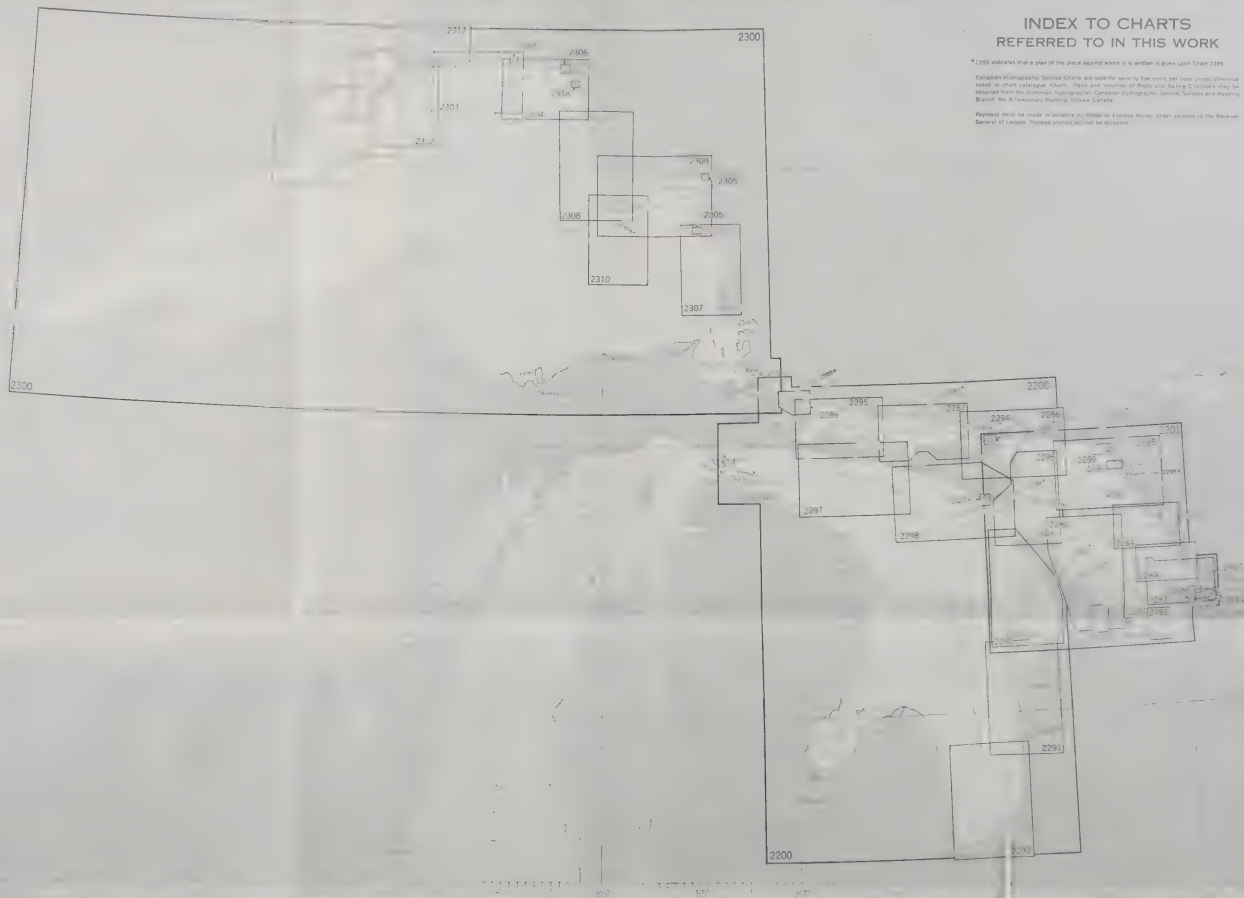
The season for navigation is from about the middle of April to the middle of December—about 8 months, and it may be prolonged to 9 months by the use of a few first class ice-breaking tugs, heavy enough to stand the work of going through new ice about a foot in thickness.

INDEX TO CHARTS REFERRED TO IN THIS WORK

* 2285 indicates that a plan of the place against which it is shown is given upon Chart 2285.

Canadian Hydrographic Service Charts are sold for twenty-five cents per copy, unless otherwise noted. In sheet hydrographic Charts, plans and drawings of ports and harbours, etc., may be obtained from the Dominion Hydrographic Service, Canadian Hydrographic Service, Survey and Mapping Branch, 100 St. Lawrence Street, Ottawa, Canada.

Payment must be made in advance by Remittance or Express Money Order payable to the Receiver General of Canada. Postage stamps cannot be accepted.



GREAT LAKES PILOT

VOLUME II

CANADIAN SHORES OF LAKE HURON GEORGIAN BAY AND LAKE SUPERIOR

CHAPTER I

5

ST. CLAIR RIVER TO CAPE HURD

Datum.—The depths given in this volume agree with the charted depths. Corrections to soundings where necessary, to bring them to the present low water datum are given on the charts.

(For explanation of distances, courses and bearings, see page v)

10

Chart 2290.

POINT EDWARD (Lat. $43^{\circ} 00' N.$, Long. $82^{\circ} 25' W.$), is situated at the entrance and on the east side of the St. Clair River, adjoining the City of **Sarnia**. It is an important shipping terminal of the Canadian National Railways, a lake terminal of the Canada Steamship Lines, and a port of call for many large lake vessels. The bottom is rocky and unsuitable for anchorage in front of the docks but anchorage may be had abreast Port Huron and Sarnia. In 1951, the population was 1,837. 15

Bridge.—The Port Huron-Sarnia International highway bridge, or Blue Water bridge, about $1\frac{1}{4}$ miles long, connects Port Huron with Point Edward and Sarnia. The main portion of the bridge is of the cantilever type, with a main span 875 feet (266^m7) long and two anchor arms 326 feet (93^m2) in length. The vertical clearance is 150 feet (45^m7) above high water for a width of 200 feet (61^m0), and 135 feet (41^m1) for a width of 600 feet (182^m9). 20

Lights.—Four *fixed red* lights mark the channel limits, and two *flashing green* lights are located at the centre of the span, on the axis of the Fort Gratiot leading lights; the lights are suspended from the lower chords of the bridge. 25

Sarnia and Port Huron are also connected by a railroad tunnel and a ferry across St. Clair River.

Wharf.—The Canadian National Railways wharf, used also by the Canada Steamship Lines, is 1,400 feet (426^m7) long with a depth alongside of $22\frac{1}{2}$ feet (6^m8). 30

Coast Radio Station.—This station is situated near the lighthouses.

The entrance to the St. Clair River is obstructed by a shoal area through which the United States Government has dredged a ship channel. This channel is about 3.6 miles along, 800 feet (243^m8) wide and $26\frac{1}{2}$ feet (8^m0) deep, the middle line of which is indicated by Point Edward leading lights in line. The depths adjacent to the channel on the west side are generally about 19 feet (5^m8) and the material is quite stable. 35

Chart 2290.

On the east side of the channel, a shallow area embracing Corsica Shoal and numerous mounds of dumped spoil from dredging operations, with limiting depths of 10 to 14 feet, (3^m0 to 4^m3) extends from a point one mile north of Point Edward front leading light northward a distance of 2 miles and one mile eastward of the channel. Vessels drawing less than 14 feet (4^m3) (except in heavy weather) may pass over the shoals off the point and safely enter the river by giving the south shore of the lake a berth of half a mile.

- Some wreckage, with a least depth of 16 feet (4^m9) over it and with 26 feet (7^m9) of water surrounding it, was located in 1914, at a point 034°, distant 3½ miles from Fort Gratiot light and 1½ miles east of the channel.

Current Velocity.—The river leaves Lake Huron with a velocity, opposite Fort Gratiot light, of 5 miles per hour.

- Leading Lights.**—Front.—On the beach close to the turn into St. Clair River, a *fixed red* light is shown, at an elevation of 35 feet, (10^m7) from a white square wooden tower, visible 8 (7 nautical) miles. Rear.—A *fixed red* light, on a yellow daymark with a black stripe attached to the International bridge, is shown at an elevation of 120 feet (36^m6) and located 2,266 feet (691^m4) 130½° from the front light. This range should be followed to its intersection with the Fort Gratiot range in the St. Clair River.

- Front.—Fort Gratiot leading lights are situated on the west side of St. Clair River a mile southwestward of Fort Gratiot lighthouse. The front light is shown, at an elevation of 42 feet, (12^m8) from a black skeleton steel tower with white oval daymark situated close to the beach. Rear.—The rear light is shown, at an elevation of 64 feet (19^m5) from an iron skeleton tower surmounted by a white elliptical daymark, located 212 yards (193^m8), 207°, from the front light. These lights are *fixed green* and are unwatched.

- Fort Gratiot Light.**—On the west shore of Lake Huron, about 300 yards (274^m3) north of the entrance to St. Clair River, and 308°, distant 675 yards (617^m2) from the front leading light at Point Edward, is erected a white conical tower, which from a height of 82 feet (25^m0) exhibits a *flashing green* light, visible 17 (15 nautical) miles.

Fog Light.—A *fixed amber* light is shown, in an 004° direction toward Lake Huron lightship, only when foggy in the river.

- Fog signal.**—A diaphragm chime horn, only when foggy in the river, as seen from this station, sounds a group of *two* blasts *every 30 seconds*.

There is a telephone at this station.

Available information on fog conditions in the upper river will be given by this station by radiophone when requested.

- Lake Huron Light-vessel.**—A lightship, hull painted black with "Huron" on the sides, is moored 6,900 yards (6,309^m4) north of Point Edward front leading light, and about 215 yards (196^m5) west of the range. At an elevation of 44 feet (13^m4) is exhibited a *group flashing white* light (2 flashes every 10 seconds), visible 14 (12 nautical) miles.

- Fog signal.**—A steam whistle sounds blasts of 2 seconds duration, every 20 seconds.

Radio beacon.—There is a radio beacon on the lightship, with sound signals synchronized for distance finding.

Chart 2290.

Buoys.—Lake Huron dredged cut is marked by a black light-buoy, showing a *flashing white* light, moored on the west side of the channel 1,400 feet (426^m7), and a red light-buoy showing a *flashing red* light 2,500 feet (762^m0) on the east side, northeastward from Fort Gratiot light. Two red light-buoys and two black light-buoys, in pairs, showing *red* and *white* lights, respectively, mark the channel between the above buoy and the light vessel. A red light-buoy, showing a *flashing red* light, is moored on the east side of the channel abreast the lightvessel. All these buoys show *flashing* lights every 4 seconds, and, with the exception of the last-mentioned, are fitted with radar reflector. A black can buoy is moored on the west side of the channel, 200 feet (61^m0) north of the light-vessel.

Regulations governing length of tow lines.—On the connecting waters of the Great Lakes between Lake Huron lightvessel and the southerly limit of the improved channels of the Detroit River, terminating in Lake Erie, the length of tow lines shall not exceed by more than 50 feet (15^m2) the length of the scow, barge, or vessel being towed; provided that no vessel, scow, or barge shall be required to have a tow line less than 250 feet (76^m2). The length of the tow lines shall be measured from the stern of one vessel to the bow of the following vessel.

Directions.—To enter St. Clair River, vessels should bring the Point Edward leading lights in one, bearing 180°, when about 3 miles off, to get the best water through the dredged channel. Shortly before Fort Gratiot main light comes abeam, the Fort Gratiot leading lights will be seen in one in the bay on the west shore of St. Clair River, bearing 207°. Keep them so until well into the river, when gradually swing to follow the curve of the stream, keeping the Port Huron shore best aboard.

A **Coast Guard station** is located on the west side of the entrance to the St. Clair River, near Fort Gratiot light.

Harris Point.—From the entrance to St. Clair River, the low thinly wooded Canadian sand beach trends in a northeasterly direction nearly 14 miles, being fronted by a sandbank about 400 yards (356^m8) in width with, however, a depth of 17 feet (5^m2) of water, 1¼ miles from the shore, 10½ miles from the entrance of the river. Thence, the shore turns northward for 2 miles to Harris Point, the bay thus formed being fronted by a sandbank, with 12 to 16 feet (3^m7 to 4^m9) over it, having a maximum width of three-quarters of a mile. From Harris Point, the bank extends nearly two-thirds of a mile, and a detached spot, with 21 feet (6^m4) least water on it, lies 271°, distant 1½ miles from the point.

Kettle Point (Cape Ipperwash) (Lat. 43° 13' N., Long. 82° 01' W.)—From Harris Point, the shore, now changed from sand to stones, trends in a northeast direction 8½ miles, the last 5 miles being fronted by a very shallow bank extending off one mile. Hence, the shore of this foul bay trends northward 3 miles, with the same extensive bank to Kettle Point of Cape Ipperwash. The latter is a very decided projection, low, wooded, and fringed with boulders and reefs. On the shore, just east of the point are a number of summer cottages.

Cape Ipperwash is an Indian Reserve.

Kettle Point Reef.—From the north end of the point a shallow reef makes out north 1¾ miles to a depth of 18 feet, (5^m5) northwest 2 miles, and westward the same distance. The bank inside this limit is very shallow.

Light-buoy.—The northwestern edge of Kettle Point Reef is marked by a red light-buoy showing a *flashing red* light, moored 2.1 miles, 309° from Kettle Point.

Chart 2290.

Stony Point.—From Kettle Point, the stony shore trends eastward 3 miles to Stony Point, composed of solid rock and fringed with boulders. From the shore nearly a mile northeastward from Stony Point, a spur makes out nearly
 5 three-quarters of a mile, to a depth of 15 feet (4^m6) over boulders, and 2 miles to a depth of 29 feet (8^m8).

The **Ausable River**, an unimportant shallow stream, after paralleling the beach for 8 miles from Grand Bend (*see below*), takes a turn and approaches the shore till it breaks through at a point 5 miles eastward of Kettle Point.
 10 Only one foot (0^m3) of water can be carried over the sandy bar, and even this depth cannot be found beyond a mile up.

Port Franks is a village about 2 miles inland from the southern mouth of the Ausable River.

Air firing range.—An air firing range, the limits of which can be seen
 15 on the chart, is located about 12 miles offshore between Grand Bend and Goderich.

Grand Bend is situated northeastward $9\frac{1}{4}$ miles from the southern mouth of Ausable River. The beach from Stony Point to Grand Bend is composed of fine sand, backed by a thin growth of stunted pines, and sand dunes, which
 20 show up in the afternoon with the sun shining on them. The sandy shore is fronted by a clean sandy bank, a little under half a mile wide. A group of conspicuous summer cottages will be seen on the beach, $1\frac{1}{4}$ miles north of Grand Bend. There is also a large dance hall on the beach, one-quarter of a mile north of the entrance.

Grand Bend is so called from a sharp turn in the Ausable River, which, in its course to the lake, flows nearly north till it reaches within 700 yards (640^m1) of the south end of the clay bank. It then, as before stated, turns suddenly and follows the shore at a distance of half a mile for 8 miles, before breaking through the beach. At Grand Bend an artificial cut to the lake, 90 feet (27^m4)
 30 wide, has a protection work on the northern side consisting of a pier 372 feet (113^m4) in length and a retaining wall extending a further distance of 560 feet (170^m7) inside the river mouth. On the south side is a small protective structure of irregular shape, 361 feet (110^m0) in length. The harbour is used by small pleasure craft and fishing boats, and the entrance is maintained to a general
 35 depth of 4 to 5 feet (1^m2 to 1^m5).

Leading Lights.—Leading lights are shown at Grand Bend. The front light is exhibited, at an elevation of 20 feet (6^m1), from a lamp standard on the outer end of the pier. The rear light is shown, at an elevation of 28 feet (8^m5), from a pole with daymark situated 530 feet (161^m5) 098° from the front light.
 40 Both lights are *fixed green*.

Dewey Point.—From Grand Bend, the shore trends in a general northeasterly and northerly direction 8 miles to Dewey Point, the shore between forming a gradually rounding bay. About half a mile northeast of Grand Bend a clay bank rises, and, with gradually increasing height, surmounts the
 45 shore to, and beyond Dewey Point.

Cantin Shoal is a dangerous pile of boulders, with only 10 feet (3^m0) water on it, lying over three-quarters of a mile from the shore, $3\frac{1}{4}$ miles northward of Grand Bend. Within $1\frac{1}{4}$ miles from this shoal, in a northeast direction, are three other spots, with 18 feet (5^m5) over them.

Chart 2290.

Two shoals, with 17 and 18 feet (5^m2 and 5^m5) of water over them, lie 2 miles southward from Dewey Point, nearly two-thirds of a mile from the nearest land, and a quarter of a mile outside the shore bank.

On the hill, about one mile south of Dewey Point, is situated the village of **St. Joseph**. The shore bank off St. Joseph is over a third of a mile wide and very foul. 5

The shore bank from Grand Bend to St. Joseph is a quarter of a mile wide, and composed of sand and boulders. One and three-quarters miles from the shore, about 1 $\frac{1}{4}$ miles southward of St. Joseph, is a depth of 24 feet (7^m3). 10

From Dewey Point, the shore runs straight in a northerly direction 10 miles to the mouth of **Bayfield River**. Surmounting the sand and boulder beach is the usual clay bank about 50 feet (15^m2) high, backed by farms and farmhouses. The shore bank, a quarter, to over a third of a mile wide, is very foul, the bottom covered with large boulders. 15

Bayfield (Lat. 43° 34' N., Long. 81° 42' W.) is a village of about 500 people, increasing to about 2,000 during the summer season. It is located at the mouth of the Bayfield River. From the offing, very little can be seen of the village which stands about 100 feet (30^m5) above the lake, but a few houses closer together than usual indicate the locality. The village has several small hotels and is on the Blue Water Highway. 20

The harbour entrance is formed by North and South piers. South pier is 824 feet (251^m1) long and about 30 feet (9^m1) wide in its outer portion. North pier is 755 feet (230^m1) long and varies in width from 20 to 30 feet (6^m1 to 9^m1). The outer 100 feet (30^m5) of this pier turns to the southwest forming protection for the outer basin and inner harbour. Stone talus at the outer end and on the north side make approach, except on the south side, dangerous. The depth of water between the piers varies from 6 to 10 feet (1^m8 to 3^m0) depending on the location of the bar, and these depths obtain inwards to the fishermen's wharf on the north side of the inner harbour. 25 30

A fishermen's wharf extends along the north side of the inner harbour for a total length of 503 feet (153^m3). This affords accommodation for small boats, in addition to the fishing craft, with about 7 feet (2^m1) of water alongside. It is safe to tie up to this wharf and remain there during all kinds of weather. Diesel oil for small craft is available. 35

Light.—Fog signal.—From a pole, on the south pier, there is shown a *fixed red* light, 27 feet (8^m2) high, a fog whistle sounds *one* blast every *30 seconds* and is visible 10 miles.

Buoy.—A black spar buoy is moored about 500 feet (152^m4), 236°, from the light on the south pier, to mark the end of the north pier which is submerged. 40

Beacon.—A white triangular slatwork day beacon, 21 feet (6^m4) high, is located on the shore on the north side of the entrance to the harbour, immediately north of the north pier.

A rock, with 18 feet (5^m5) over it, lies two-thirds of a mile westward from the mouth of Bayfield Harbour. The bank off the mouth is rocky and uneven, but only a third of a mile wide, whilst opposite the south edge of the village, the bank is two-thirds of a mile wide, with only 15 feet (4^m6) at the outer edge. 45

The shore, from Bayfield to Blacks Point, trends almost straight in a northerly direction 9 miles, and is fringed with shallow water for an average distance of half a mile. At 1 $\frac{3}{4}$ miles north from the mouth of Bayfield Harbour is a rock, 50

Chart 2290.

with 18 feet (5^m5) of water over it, half a mile offshore. Another spot, with the same depth over it, lies three-quarters of a mile off the shore 4 $\frac{1}{4}$ miles north of the same harbour. The whole shore between Bayfield and Goderich is
 5 surmounted by a clay bank, about 75 feet (22^m9) high; a few farm buildings show on it. **Blacks Point** is not very prominent, but the trees on it are of a much darker shade than the surrounding ones; off it a spit makes out in a northwest direction a little over half a mile.

From Blacks Point to Goderich, the coast trends northerly three and one-
 10 third miles. The shore bank is nearly half a mile wide, shallow and covered with boulders.

Nearly two and a quarter miles south of Goderich is a depth of 21 feet (6^m4) at 1 $\frac{1}{2}$ miles from shore. Nearly a mile farther north, a depth of 24 feet (7^m3) will be found also 1 $\frac{1}{2}$ miles from shore.

15 *Chart 2291.*

Goderich Harbour is situated at the mouth of the Maitland River, 3 $\frac{1}{2}$ miles northward of Blacks Point, and 59 (51 $\frac{1}{4}$ nautical) miles from the lightvessel at the head of St. Clair River. This artificial harbour has its entrance between two
 20 concrete piers, jutting out at right angles to the shore. The channel between the piers, for a length of 1,600 feet, (487^m6) is 200 feet (61^m0) wide and opens into the harbour basin area of 25 acres, which is separated from the Maitland River by the river breakwater and north pier on which are located the Canadian National Railways storage tracks.

The perimeter of the harbour basin is lined with combined cribwork and
 25 concrete walls—the south wall extending inwards in prolongation of the south entrance pier. A small island, known as **Ship Island**, about half an acre in size, is located near the northeast corner of the basin.

Breakwaters.—The entrance to the harbour is protected from heavy seas by two concrete breakwaters. The northwest breakwater, 1,500 feet (457^m2)
 30 long and 30 feet (9^m1) wide, extends in a northeasterly direction from the outer entrance. The southwest breakwater, extending southeasterly from the outer entrance, is 1,400 feet (426^m7) long. The channel opening between the breakwaters is 550 feet (167^m6) wide.

Depths.—The harbour approach, to abreast the outer end of the northwest
 35 breakwater, has a minimum depth of 26 feet (7^m9). From that point to the inner harbour basin the available depth is 21 feet (6^m4) whilst that in the basin is 21 feet (6^m4). In the berths along the south harbour wall in front of the elevators, the controlling depth is 21 feet (6^m4); at the mooring pier at the western end of the basin there is 20 feet (6^m1) alongside. The bottom of this basin is solid
 40 rock.

Vessels may use the entire basin area south and west of Ship Island. Small craft will find a depth of 10 feet (3^m0) north and east of this island.

Buoys.—The dredged channel off the entrance to the harbour is marked with a black spar buoy on the north side and a red spar buoy on the south side. In-
 45 ward from the breakwaters, the channel is marked with three black spar buoys on the north side and two red spar buoys on the south side.

In the basin, three black spar buoys mark the edge of the dredging on the southeast and southwest sides of Ship Island, at the head of the harbour.

Chart 2291.

Lights.—Fog signal.—On the hill, 1,000 feet (304^m8) south of the harbour, is a white square stone tower 20 feet (6^m1) high that from a height of 150 feet (45^m7) exhibits a *group flashing white light (two flashes every 25 seconds)* visible 21 (18 nautical) miles. The *flashes* occur thus:—*flash*; interval *six seconds*; *flash*; interval *nineteen seconds*. It is known as the Main light. 5

Ten equally spaced lights on poles 30 feet (9^m1) high, on the South Pier are conspicuous from the lake and clearly mark the location and direction of entrance between the piers.

A *flashing red* light is exhibited, at an elevation of 34 feet (10^m4), at the 10 outer end of the South Breakwater.

A fog diaphone sounds *one* blast every *30 seconds* at the above light.

A *flashing white* light every *5 seconds* is exhibited, at an elevation of 25 feet (9^m6), from a concrete tower on the west end of the North Breakwater.

Leading lights.—*Fixed green* leading lights are exhibited, which in line, 15 bearing 089½°, lead into the outer harbour.

The front light is exhibited, at an elevation of 41 feet (12^m5), from a red, square wooden structure near the outer end of the North Pier.

The rear light is exhibited, at an elevation of 65 feet (19^m8), from a square, steel skeleton tower situated 1,430 feet (435^m9), 089½° from the front light. 20

Radio beacon.—There is a radio beacon situated at the outer end of the North Pier.

Cable.—A cable crosses the entrance channel near the inner end of the South Pier, and is continued seaward to the South Breakwater.

Anchorage.—Good anchorage may be found off the piers, with clay 25 bottom, but none in the harbour, which is rock bottom.

Directions.—To enter the harbour, the breakwater light should be given a berth of 250 feet (76^m2) and the leading lights brought on, bearing 089½° until 200 yards (61^m0) off the front light; when alter course to pass midway between the piers. 30

Goderich.—(Lat. 43° 45' N., Long. 81° 44' W.).—Large grain elevators, situated on the southeast side of the harbour, are the most prominent buildings in Goderich. From the harbour and lake very little of the town can be seen but the elevators, water works, chimneys, lighthouse, courthouse, and church spires render the place unmistakable. It is a terminus of the Stratford 35 and Goderich branch of the Canadian National Railways and also of a branch of the Canadian Pacific Railway. It had a population, in 1951, of 4,934, with water works, electric light, telephone, telegraph and express offices. All the usual supplies can be obtained here, and quite extensive repairs made to machinery. 40

Intake Pipe.—The waterworks intake pipe runs from a point on shore, south of the Canadian Pacific Railway freight shed in a 250¾° direction, for 2,200 feet (670^m6), to the intake crib. There is a depth of about 15 feet (4^m6) over the crib.

Chart 2291.

Maitland River cannot be navigated by anything but the smallest craft, the sandy bar across the mouth having not more than a couple of feet on it. The river formerly emptied itself into the lake through the harbour, but this
5 has been changed, due to the breakwater having been built and a new mouth made north of the harbour.

Coast.—From Goderich, the shore, surmounted by a high clay bank, trends north nearly 4 miles, to an insignificant projection called **Wright Point**, forming a slight bay fringed by shoal water, with a width of two-thirds of a
10 mile. The point is well marked by a conspicuous summer hotel near the edge of the high bank.

From Wright Point, the coast backed at a distance of 100 to 200 feet (30^m5 to 61^m0) by a clay bank 50 to 60 feet (15^m2 to 18^m3) high, trends northward with a slight inward curve 5 miles to Port Albert. The edge of the clay bank
15 is generally lined with trees, but inside, the land is nearly all cleared. From the longer and southern portion of this shore, a shallow bank extends a quarter of a mile only, but, from a point 2 miles south of Port Albert the shore bank makes off twice that distance.

Port Albert is a small settlement at the mouth of Ninemile Creek, $8\frac{1}{2}$ miles
20 north of Goderich. From the offing, the place can be picked up by the half dozen farmhouses and barns, with a small church spire half a mile back from the shore. A couple of small piers, built in an attempt to make a harbour, are disintegrating and at times a gravel bar at the entrance shows above the water surface.

A narrow shoal, one-quarter of a mile long north and south, and with
25 21 feet (6^m4) least water over it, lies three-quarters of a mile, a little south of west from the entrance to the harbour.

From Port Albert, the shore trends with a double slight curve $13\frac{1}{2}$ miles northward to **Point Clark**. Until $2\frac{1}{2}$ miles from the latter, the clay bank 100 feet (30^m5) high, skirts the shore closely, leaving no boat landing. The
30 land above the bank is well cultivated, houses and barns being conspicuous among the few trees that have been left. From Port Albert, the shallow shore bank is a quarter to half a mile wide, but from a point abreast the small village of Kintail, $5\frac{1}{2}$ miles southward from Point Clark, the bank reaches off $1\frac{3}{4}$ miles with slightly greater depths about three-quarters of a mile farther out, and
35 continues with slightly diminishing breadth to Point Clark, whence it extends off one mile, and is covered with treacherous boulders.

Point Clark is an important turning point on the east shore of Lake Huron. It is a low sandy point with a few boulders strewn along, and thickly wooded with pines and birch.

Clark Reef, a pile of boulders, having only 3 feet (0^m9) of water over
40 it, lies a little north of west and about one mile west of Point Clark light. The pile is just upon the outer edge of the bank and has been the cause of several wrecks.

Light.—Close to the west extreme of Point Clark is erected a circular stone
45 tower, painted white, on the top of which is a lantern, that from a height of 93 feet (28^m3) exhibits a *group flashing white light*, showing 3 flashes every 15 seconds, thus: *flash*, interval $2\frac{1}{2}$ seconds; *flash*, interval $2\frac{1}{2}$ seconds; *flash*, interval, 10 seconds. The light is visible 17 (15 nautical) miles.

Buoy.—A red spar buoy is moored, in 24 feet (7^m3) of water, west of Clark
50 Reef, $1\frac{1}{8}$ miles, 279° from Point Clark light.

The shore trends very nearly straight northeasterly 9 miles from Point Clark to the mouth of the **Penetangore River** and is nearly all a shallow sandy

Chart 2291.

beach lined with boulders. While the shore itself is low, a clay bank 50 to 75 feet (15^m2 to 22^m9) high skirts the shore at a distance of from 100 yards (30^m5) to a quarter of a mile—except at Point Clark itself, where the low flat is much wider. The high land has all been cleared for farming, and the farm buildings make conspicuous marks along the shore. 5

Pine Brook is a small unimportant stream emptying into the lake at a point 1½ miles northeast of Point Clark.

From Point Clark, the shore bank continues to Kincardine with gradually decreasing breadth excepting at nearly mid-distance between the two places, where **Tolmie Reef**, with only 12 feet (3^m7) over it, lies at its outer edge. It is 1½ miles from the shore and 4 miles northeastward of Point Clark light. Only slightly deeper water will be found between this reef and the shore. 10

Kincardine, with a population of 2,672 in 1951, is situated at the mouth of the Penetangore River, 9 miles northeast of Point Clark and 33 (28½ nautical) miles north of Goderich. It is a terminus of the Palmerston and Kincardine branch of the Canadian National Railways, with the station and yards on the south side of the harbour entrance. One of the churches, situated on the rising ground in the northeast part of the town, makes a conspicuous mark from the lake. The waterworks standpipe, situated close to this church, is also very prominent. Supplies of all kinds can be obtained and small machinery repairs made. 15 20

The harbour is entirely surrounded by wharves. The inner basin, with an area of about 3 acres, is immediately south of the mouth of the river, and is connected to the lake by a channel, between two parallel piers, built in a northwest and southeast direction at right angles to the beach. The piers extend 650 feet (198^m0) from the shore and are 95 feet (29^m0) apart. The entrance between the piers is protected by a breakwater, 600 feet (182^m8) in length, lying to the northwestward, the south end of which is 850 feet (259^m0) 308° from the outer end of the north channel pier. The harbour entrance is situated one mile southwest of Horton Point. The depths in the channel entrance are continuously changing, but the maximum depth is usually close to the outer end of the north pier, where depths of 12 to 14 feet (3^m7 to 4^m3) are obtainable. Inquiries should be made before entering this harbour with draughts over 12 feet (3^m7). The inner harbour structures are available for the discharge of cargoes and provide accommodation for tourist craft. The fishing fleet usually secures to the east wall of the basin. The inner basin has a general depth of 9 to 14 feet (2^m7 to 4^m3) In the berths around the three sides, there is a least depth of 12 feet (3^m7), except in the southeast corner, where the depth is 8 feet (2^m4). 25 30 35

Ice forms in the harbour about December 25 and breaks up about April 15. 40

Leading Lights.—Front light.—Upon the north pier, and about 30 feet (9^m1) from its outer end, is erected a pole that, from a height of 35 feet (10^m7) exhibits a *fixed red* light visible 8 (7 nautical) miles. A white diamond-shaped daymark is attached to the pole.

Main and rear light.—In the town, and on the hill, bearing 105° distant 433 yards (395^m9) from the front pole light, is erected a white octagonal tower with dwelling attached, that, from a height of 80 feet (24^m4), exhibits every five seconds a *flashing white* light visible 16 (14 nautical) miles with a *fixed white* light of lower intensity between the flashes. These two lights in one, lead somewhat to the northward of the head of the north pier, and the front light should be left on the port hand in entering the harbour. 45 50

Fog signal.—An electrically operated fog-horn, on the front light pole, sounds a blast of *two seconds* every *six seconds*.

Chart 2291.

Crib.—The intake pipe of the Kincardine water system, extends seaward 2,225 feet (678^m2) from a point on the shore, which is 1,250 feet (381^m0) northward of the inner end of the north Government pier. A crib, about 15 feet
5 (4^m6) square, and with a depth of 15 feet (4^m6) over it, is located at the end of this pipe, and lies 1,250 feet (381^m0) northwestward from the southwest end of the breakwater.

Horton Point (*Lat.* 44° 11' N., *Long.* 81° 38' W.), off which shallow water extends half a mile, is a very slight sandy point, situated one mile north of
10 Kincardine Harbour, the shore between being fronted by a shallow bank half a mile wide.

The shore northward of Horton Point is nearly straight for about 5 miles to **McRae Point**, the first 2 miles consisting of sand beach, strewn here and there with boulders, with a shallow bank extending off about half a mile. A
15 bank, 20 to 30 feet (6^m1 to 9^m1) high, near Horton Point, skirts this part of the shore at a distance of over 2 miles. From the northern 3 miles of this section of shore, the shore bank extends off from one-third to two-thirds of a mile. McRae Point is low and composed of boulders.

Inverhuron Bay, between McRae and Gunn Points, is a slight indentation,
20 about half a mile south of the latter. There is fairly good anchorage close under the south shore of Gunn Point.

Gunn Point is low, and bears 006° distant 2 miles from McRae Point. The shore between, including Inverhuron Bay, is fringed with boulders for a width of a quarter of a mile.

Douglas Point is very low, but stands out more prominently than the
25 others along the shore. It is situated 1 $\frac{3}{4}$ miles northward from Gunn Point, just north of which there is a small bay. The shallow bank from the whole shore between the points is a third of a mile wide.

Macpherson Point, situated 1 $\frac{3}{4}$ miles northeastward from Douglas Point
30 is the south entrance point to Baie du Dore. Between these points, the shallow bank extends from 200 yards (182^m8) to one-third of a mile; from Macpherson Point itself, shoal water makes off a third of a mile.

Scott Point, situated 1 $\frac{1}{2}$ miles northeastward from Macpherson Point,
35 forms the north entrance point to Baie du Dore. It is low, stony and rocky, and has shallow water off it for three-quarters of a mile.

Baie du Dore is the three-cornered bay, a little over one mile long, lying between Macpherson and Scott Points. Its shores are low and stony, and the water shallow and foul.

Loscombe Bank, the most important danger between Clark Point and
40 Chantry Island, lies off Baie du Dore. It has a least depth on it of 9 feet (2^m7), situated 336°, distant 1 $\frac{1}{4}$ miles from Macpherson Point and 269°, 2 miles from Scott Point. From this spot, the shoal runs west a quarter, and east a little over three-quarters of a mile. It is about one-third of a mile wide and is separated from the bank off Scott Point by a passage 300 yards (274^m3) wide.

Clearing Mark.—To pass one-quarter of a mile west of Loscombe Bank,
45 keep McRae Point in sight west of Douglas Point, bearing 184°.

Chart 2291.

Welsh Bank is a large flat with 9 to 18 feet (2^m7 to 5^m5) of water over it, lying northward nearly $1\frac{1}{2}$ miles from Scott Point. The bank is an enlargement of the usual shallow fringe to the shore and is about one mile wide.

Coast.—From Scott Point, the shore trends in a general northeast direction with a slight curve $5\frac{1}{2}$ miles to **MacGregor Point**, off which shoal water extends northwestward three-quarters of a mile, to a depth of 12 feet (3^m7). From the shore between these points, the shallow water stretches off three-quarters of a mile. 5

Scougall Bank is a dangerous enlargement of this shallow bank, nearly midway between Scott and MacGregor Points. It extends a mile offshore, where a depth of 14 feet (4^m3) will be found. 10

From MacGregor Point, the shore sweeps in a general easterly direction $4\frac{1}{4}$ miles to Port Elgin Harbour. Parts of this shore are sandy beach, but, most of it is fronted by shallow boulders with reefs extending off $1\frac{3}{4}$ to $2\frac{1}{4}$ miles; a description of the most dangerous of these follows. 15

Belcher Reef is a long narrow spit, that extends north-northeastward $1\frac{3}{8}$ miles from a small point, situated a mile east of MacGregor Point. It has 12 feet (3^m7) near its northeast extremity and rapidly shoals to 7 feet (2^m1).

Clearing marks.—To pass west of it, keep Macpherson Point in sight west of the land (**Ninemile Point**) one mile southwest of MacGregor Point, bearing 221° . 20

Boyer Reef is a very shallow spur, extending northward three-quarters of a mile, from a small point that lies $1\frac{3}{4}$ miles east of MacGregor Point. Outside this very shallow part, the reef extends still further north two-fifths of a mile. Being marked by reefs on either side, it is not very dangerous to boats. 25

Malcolm Reef is long, narrow and quite detached from the shore. The southwest and shoalest part has only 7 feet (2^m1) of water over it and bears 255° , distant $1\frac{3}{4}$ miles from Port Elgin front leading light. Hence, the reef extends northeastward half a mile to a depth of 14 feet (4^m3) with a width of 150 yards (137^m2). 30

Dack Spit extends offshore half a mile from the southwest end of the long sand beach, upon which Port Elgin is built. It has only 11 feet (3^m4) of water near its outer end.

Logie Rock, with 11 feet (3^m4) least water on its north end, is almost joined to Belcher Reef, there being only a narrow passage between. The shoalest spot bears from MacGregor Point 033° distant 3 miles. From this shoal spot, the shoal extends southwestward over a mile and is 300 yards (91^m4) wide. 35

Light-buoy.—A red light-buoy showing a *flashing red* light, is moored on the northeast side of Logie Rock.

Another rock, with 22 feet (6^m7) least water on it, lies $1\frac{1}{2}$ miles northwest, ward of Port Elgin. 40

Clearing marks.—To pass southeast of Logie Rock, keep Douglas Point just touching Ninemile Point, one mile southwest of MacGregor Point, bearing 222° . Another mark, to pass northwest of Logie Rock, is to bring the rear leading light at Saugeen River in line with Chantry Shoal black spar buoy (if discernible), bearing 056° . 45

Chart 2291.

Port Elgin (*Lat.* 44° 26' N., *Long.* 81° 24' W.), had a population of 1,558 in 1951. The harbour, at the head of a slight bay, is artificially formed by two breakwaters, parallel to the shore, and a sandbar connecting the shore and the south end of the south breakwater, entirely closing the former entrance channel. There is protection from all winds and the harbour is used to a considerable extent by tourist boats and fishing craft. An entrance channel, 100 feet (30^m5) wide, leading from deep water in the lake to the gap, of the same width, between the breakwaters has been dredged to a depth of 11 feet (3^m4). In the basin, an area of about 4½ acres has been dredged to the same depth. The town is situated on the Palmerston and Southampton branch of the Canadian National Railways, with the station about a mile from the wharf. There are two hotels in the town and several summer hotels operate during the tourist season.

Wharf.—Directly east of, and 400 feet (121^m9) from the channel opening, is the Government wharf with a face 420 feet (128^m0) in length; the southerly portion is dry. The wharf provides excellent landing facilities for small craft. There are several roads between it and the town and an extensive summer colony area is located close by. Protected by the north end of the wharf is a small boat slip, 120 feet (36^m6) wide, providing wharf accommodation for a total length of 350 feet (106^m7) with a depth of about 5 feet (1^m5).

Leading Lights.—*Fixed red* lights from reflector lanterns are exhibited at Port Elgin; the front light is shown from a pole with a white diamond-shaped daymark, erected on the north end of the wharf 60 feet (18^m3) from the outer end; the rear light is shown from a similar structure, distant 528 feet (160^m9) 108½° from the front light. The lights in line lead through the dredged cut to the wharf.

Buoys.—A red spar buoy and a black spar buoy mark the entrance of the dredged channel leading to the wharf.

Directions for Port Elgin.—If from the southwest, take care not to shut in Douglas Point, behind the shore southwest of MacGregor Point, bearing 221°, until the leading lights at the harbour come on bearing 108½°. Care must be taken to avoid Logie Rock. Steer on this range, until the breakwater is reached. Local knowledge is required to enter the harbour. Small vessels may take up a berth near the northeast end of the landing wharf.

If from Southampton Harbour, take care to give the shore a berth of half a mile until the leading lights come on. If from the north, give the buoy marking the south end of Chantry Shoal a berth of half a mile, and steer 173°, until the leading lights come on. After passing the above buoy, the master of a vessel should take care to avoid Logie Rock.

Chart 2292.

Southampton Harbour.—From the north entrance of the bay containing Port Elgin, the shore trends northeastward, 3 miles to Southampton Harbour; **McNab Point**, upon which stands the Southampton rear leading light, being about midway. From the shore southwestward of McNab Point, shoal water extends nearly half a mile. The southern part of the shore, between McNab Point and the railway pier, is fringed with large boulders, the remainder of the shore being sandy. (*See plan on chart 2292.*)

Chart 2292.

Southampton Harbour is the shallow area enclosed between Chantry Island and the main shore, and is protected from north winds by two breakwaters the western one extending in an easterly direction with a curve 2,260 feet from the northeast extremity of Chantry Island. The eastern breakwater runs in a northwesterly direction from the main shore 2,000 feet, leaving a passage between the two of 450 feet. In 1953, the breakwaters were destroyed and no longer afford any protection. The harbour is exposed to southwest winds, and on account of the shallowness of the water, only light draught vessels can use it. 5

The anchorage space is limited to a small space close under the western breakwater. In taking up a berth farther south, care must be taken to avoid the various boulders strewn about, the worst one of which, with only 9 feet (2^m7) of water on it, lies a little north of the trend of the old Canadian National Railways pier (in ruins), and 250 yards (228^m5) northwest of its outer extremity. To ride out an autumn gale, a vessel will have an uncomfortable time at best, and should have first class ground tackle. For directions, see page 14. 10 15

The town of Southampton, with a population of 1,700 in 1951, is the terminus of the Palmerston and Southampton branch of the Canadian National Railways and is located on the Blue Water Highway. There are four hotels and supplies can be obtained. 20

The old Canadian National Railways pier, located 200 yards (182^m9) south of the eastern breakwater, is now in a state of disrepair and has no railway connection.

Leading lights.—Upon the east end of the western breakwater is erected a white pole with target that, from an elevation of 20 feet (6^m1), exhibits a *flashing white* light, visible 8 (7 nautical) miles. Bearing 178½°, 1½ miles from it, is erected on McNab Point, a white square tower that, from a height of 31 feet (9^m4), exhibits a *fixed white* light visible 12 (10 nautical) miles. 25

Light-and-bell-buoy.—In a depth of 22 feet (6^m7), on the line of the Southampton leading lights, and bearing 298°, distant a little over one mile from Saugeen River breakwater light, is moored a light-and-bell-buoy, painted red and showing a *flashing red* light. 30

Chantry Island (Lat. 44° 29' N., Long. 81° 24' W.), lies westward from Southampton, two-thirds of a mile from the main shore, and forms the west side of Southampton Harbour. It is half a mile long northeast and southwest by a quarter of a mile in width. The island is low, fringed with boulders and covered with a small growth of trees. To prevent the shore washing away, a small pier 160 yards (146^m3) long has been built near the southeast point of the island. 35

Light.—About the middle of the southeast coast of Chantry Island is erected a white, circular, stone tower, that, from a height of 94 feet (28^m7) exhibits a *flashing white* light visible 17 (15 nautical) miles. 40

Chantry Shoal, an area of very shallow water, surrounds Chantry Island. From the north end of the island it extends in north and north-northeast directions nearly one mile, with depths of 6 and 7 feet, (1^m8 and 2^m1), two-thirds of a mile from shore. Off the west side, the bank is half a mile wide. 45

Buoy.—From the southwest side of the island, very shallow water extends in the same direction one mile, where a black spar buoy is moored. The south end of Chantry Shoal is narrow and quite steep-to, there being 26 feet (7^m9)

Chart 2292.

of water 200 feet (61^m0) south of the buoy. The island is connected to the mainland by a bank, over which it is difficult to carry more than 12 feet (3^m7) of water, and there are many boulders strewn about, having over them less
5 than that depth.

Lambert Shoal, with a least depth of 8 feet (2^m4) on it, lies two-thirds of a mile northwestward from the mouth of Saugeen River, and from this shallow spot shoal water extends one third of a mile in a southwesterly, but only 100 yards (91^m4) in a northwesterly direction.

10 **Clearing marks.**—Saugeen River lights in line, bearing 095°, just clear the south end of Lambert Shoal. To pass west of both Lee Bank and Lambert Shoal keep the north entrance point of Port Elgin in line with the breakwater light, bearing 193°.

15 **Lee Bank**, with 5 feet (1^m5) of water over it, is a long narrow bank, lying parallel to, and half a mile off, the shore a little north of Saugeen River. Its shoalest spot bears 007°, distant 1·4 miles from Saugeen River breakwater light. From this spot, the bank extends southwestward half a mile and north-eastward 1½ miles, almost continuously, to a depth of 18 feet (5^m5).

20 Shipping at Southampton is now accommodated in the harbour at the mouth of the **Saugeen River**, which is located about a mile northeastward of the old Canadian National Railways wharf. The mouth of the river is protected on the north by a breakwater 696 feet (212^m2) long extending westerly in prolongation of the north bank of the river. The south pier and training wall, 1,037 feet (316^m1) long, provides accommodation for the large fishing fleet, tourist
25 boats, and coal boats with a depth alongside the outer 580 feet (176^m3) of 12 feet (3^m7). The entrance has a depth of 11 to 12 feet (3^m4 to 3^m7) as far as the turning basin and to the landing piers on the south side of the river. The turning basin is 260 feet (79^m2) wide. The river is navigable, above the turning basin, for small boats.

30 **Buoys.**—The dredged cut in the approaches to Saugeen River is marked by three red and three black spar buoys.

Leading lights.—Near the outer end of the breakwater is erected a small, square tower, painted white, that from a height of 36 feet (11^m0) exhibits a *fixed red* light visible 8 (7 nautical) miles.

35 On the hill, 790 yards (722^m4), from the breakwater light, is erected a similar tower, that from a height of 61 feet (18^m6) exhibits a *fixed red* light, visible through a small arc upon each side of the range, 8 (7 nautical) miles.

Fog signal.—At the front light, a tyfon fog-horn sounds a blast of 3 *seconds* duration *every 20 seconds*.

40 **Directions.**—Vessels bound for Saugeen River should head on the Southampton leading lights, bearing 178°, until the Saugeen River lights come in line, bearing 095°, when head on these, passing between the spar buoys marking the channel until abreast the outer end of the north pier; thence steer for the middle of the inner part of the south pier.

45 **Ice.**—Ice usually forms in January and breaks up about the middle of March.

Caution.—Spring freshets sometimes change the channel.

Chart 2292.

Coast.—From the mouth of Saugeen River, the shore runs nearly straight $7\frac{1}{2}$ miles northeastward to a low boulder projection named **Frenchman Point**. It is for the most part a low boulder beach, with small patches of sand, fronted by a bank a quarter to half a mile in breadth. The bank from the point itself is only a quarter of a mile wide. 5

Frenchman Bay is the slight indentation south of the point of the same name. The shore of the bay is foul for half a mile, and off the slight south containing point is a spit running out northwestward two-thirds of a mile to a depth of 9 feet (2^m7). 10

Indian reserve.—The saugeen Indian reserve comprises the land along the lake front, back to the French Bay road from about Saugeen River to Frenchman Bay.

The 5 miles of shore, running northward in a slight curve from Frenchman Point to **Sauble River**, is, with the exception of the southern half mile which consists of boulders, a clean sandy beach in marked contrast to the general character of the shore. It is fronted by a sandbank half a mile wide. The mouth of the river, only 3 feet (0^m9) deep, is protected by a large dry reef lying west from it and a third of a mile long. 15

Leading beacons are shown on the north side of the mouth of the Sauble River. The front beacon, a white 5-foot (1^m5) diamond-shaped daymark, is shown at an elevation of 12 feet (3^m7) from a white mast. The rear beacon, on a sand ridge 185 feet (56^m4), 016° , from the front, is a white 5-foot (1^m5) slatwork daymark, shown at an elevation of 32 feet (9^m3) from a white mast. Owing to the shifting of the channel, these beacons may not always lead through the best water. 20 25

From Sauble River, the shore trends northwesterly $1\frac{1}{2}$ miles and then north one mile to a low shelving point and Indian reserve named **Chiefs Point**. The south portion of this shore is fronted by a shallow rocky bank half a mile wide, the middle part by a reef extending two-thirds of a mile to a depth of 15 feet (4^m6), and thence to Chiefs Point the bank is half a mile in breadth. 30

Fishing Islands, are a group of small, low, thinly-wooded islands, extending from Chiefs Point to Pike Bay, a distance of $11\frac{1}{2}$ miles. The islands are fronted by a continuous shallow bank, extending in some cases $1\frac{1}{2}$ miles offshore, but outside this bank the water is good and soon deepens to 10 fathoms (18^m3). Amongst the group are several good anchorages for which see pages 16, 17 and 18. Originally part of the Indian reserve, many of the islands are now privately owned. 35

Whitefish Island, about 10 feet (3^m0) high and well wooded with small trees, is the most southerly of the group about to be described. It is over a quarter of a mile long, north and south, and is situated a little more than a mile northward of Chiefs Point. Between them, 10 feet (3^m0) can be carried and deep water reaches to within 200 yards (182^m9) of the west side. 40

Buoy.—A red spar buoy is moored approximately 1,200 feet (365^m7), 179° , from the south point of Whitefish Island.

Cigar Island is a small round island lying about half-way between Whitefish Island and Lonely Point (see page 18). 45

Anchorage.—A quarter of a mile east of Whitefish Island is a small anchorage, in 14 to 17 feet (4^m3 to 5^m2) over mud. The shelter is very good, but a heavy swell comes in with westerly winds. The entrance to the anchorage,

Chart 2292.

250 yards (228^m5) south of Whitefish Island, is hard to make and very narrow, with a greatest depth of 11 feet (3^m4). A stranger is advised to examine the channel from a boat before attempting with a vessel.

- 5 In thick weather, or at night, vessels approaching the shore from Cape Hurd to Chiefs Point should not shoal to less than 10 fathoms (18^m3).

Whiskey, Smokehouse, Cranberry, Indian, Jack and Rownes Islands form a group stretching 2 miles south of Main Station Island. They are low, covered with small trees, surrounded by very shoal water, and are separated
10 from the mainland by about one foot (0^m3) of water.

Cranberry Island (Lat. 44° 44' N., Long. 81° 18' W.), 124 acres in extent, is the largest and central one of the group, with Smokehouse and Whiskey Islands lying between it and **Lonely Point**. A knoll on the east side of Cranberry Island, and connected to it, is known as **Rabbit Island**.

- 15 **Indian Island** is the central one of a small group just north of Cranberry. At low water stages, they are connected to each other. The northeastern portion of Indian Island is known as **Frog Island**.

The western edge of the bank from the above group, with 14 feet (4^m3) of water on it, is situated half a mile southward from Scotch Bonnet Island
20 (see below).

The south end of the same bank, with the same depth on it, lies 185°, distant 1½ miles from the same island, and two-thirds of a mile in a westerly direction from the west end of Cranberry Island, with deep water between.

- Scout Reef**, about 5 feet (1^m5) high, stands well outside the nearest island.
25 It is small, quite bare, and is situated three-quarters of a mile northwesterly from Scotch Bonnet, the nearest island. Shallow water extends two-thirds of a mile southwestward from Scout Reef to 12 feet (3^m7), half a mile westward to 14 feet (4^m3), and the same distance southward to 11 feet (3^m4). There is no passage between Scout Reef and Basswood Island.

- 30 **Clearing marks.**—To pass west of the spur from Scout Reef and all the shallow water off Main Station Island, keep Kolfage Island open west of Ghegheto Island, bearing 001°. To pass south of it, keep the south side of Main Station Island open south of the trees on Scotch Bonnet, bearing 079°.

- Scotch Bonnet Island**, lies near the northwest edge of the bank from
35 the Main Station Group and, close to the edge of the deep water.

- Anchorage under Burke Island.**—Between the shoal water of Scout Reef and Scotch Bonnet is a lane of water, about 20 feet (6^m1) deep, leading nearly to Basswood Island. To use this lane keep the millstack at Red Bay (see page 19) in line with the west side of the trees of Basswood Island, bearing 025°, and
40 when the north side of Main Station Island bears 072°, steer to pass 300 yards (274^m3) northward of it, though as little as 12 feet (3^m7) may be found on this track. When the north point of the latter island comes abreast, haul northward for the anchorage a third of a mile southeast of Burke Island (see page 17). A master of a vessel should proceed slowly and keep his lead going.

- 45 **Main Station Island** was at one time the most important fishing station on the lake, and upon it are still the remains of the first stone house of the neighbourhood. It is about 10 feet (3^m0) high, half a mile long in a southwest and northeast direction, a third of a mile wide, and lies close northward from Indian and Rownes Islands. From its northeast point, a very shallow reef

Chart 2292.

stretches northeastward, over half a mile. The water, between Main Station on the south and Basswood and Burke Islands on the north, has a nearly uniform depth of 12 to 16 feet (3^m7 to 4^m9).

A small spot, with 6 feet (1^m8) of water over it, lies near the track to the anchorage southeast of Burke Island. It bears 249°, a third of a mile, from the northwest point of Main Station Island. 5

Basswood Island, surrounded by very shallow water, is a small islet situated nearly a mile northeastward from Scot Reef.

Burke Island is only important on account of the anchorage southeast of it. It lies over three-quarters of a mile northeastward from the north point of Main Station Island. It is about 10 feet (3^m0) high, over a third of a mile long north and south, and a quarter of a mile wide. Between Burke and Beament Islands there are many islets and rocks, but no passage for the smallest craft, small rowboats excepted. 15

McCallum Island, 10 feet (3^m0) high, covered with small trees, and with a couple of small huts on it, is situated 1 $\frac{3}{4}$ miles, northwestward from Burke Island and is the northern of a group of islands and reefs, half a mile wide, stretching 1 $\frac{3}{4}$ miles in a southerly direction from it, and through which there is barely passage for a boat. 20

From McCallum Island, a very shallow reef extends northeasterly 1 $\frac{1}{4}$ miles and between this reef and Tyson Island (*see* page 19) not more than 9 feet (2^m7) of water can be carried to Red Bay (*see* page 19).

Beament Island, about 10 feet (3^m0) high and well wooded, lies with its north end two-thirds of a mile northwestward from McCallum Island. It is one-third of a mile long south-southeast and north-northwest, by 150 yards (137^m2) wide. Shoal water extends west from the island half a mile, to pass west of which keep Kolfage Island open west of Cavalier Island, bearing 006°, or keep the gap between Ghegheto and Cavalier Islands closed, bearing 025°. 25

Anchorage.—There is a small, but limited anchorage a quarter of a mile northeastward from the island, in 21 to 24 feet (6^m4 to 7^m3) of water, to which 4 fathoms (7^m3) may be carried from outside through a very narrow channel. 30

Cavalier Island lies upon the same very shallow bank as Ghegheto Island from which it lies half a mile in a southwest direction. It is about 10 feet (3^m0) high, nearly square in shape, and 100 yards (91^m4) long. The deep water reaches to within 300 yards (274^m3) of its west point, but the reef extends southward, one-third of a mile, dropping suddenly to 4 fathoms (7^m3) in a channel 100 yards (91^m4) wide, through which, with care, a vessel can enter the small but excellent anchorage north of Beament Island, just alluded to. 35

Between the reefs from Cavalier Island and St. Jean Point, it is not advisable for a stranger to attempt to pass. Eleven feet (3^m4) may be carried from the above anchorage to Howdenvale and Red Bay, but the track must be used with great caution. Steer straight for the south end of the wharf at Howdenvale from the anchorage north of Beament Island, as no intelligible clearing mark can be given. 40

Ghegheto Island, (*Lat.* 44° 49' N., *Long.* 81° 21' W.), lying half a mile northeast of Cavalier Island, is a third of a mile long southwest and northeast and 200 yards (182^m9) wide. Shoal water extends only 100 yards (91^m4) off its north end, but the northern edge of the bank trends about 275°, three-quarters of a mile from this. 45

Chart 2292.

Drake Shoal, with 10 feet (3^m0) least water on it, almost blocks the outer west entrance to the channel separating the shallow banks from Ghegheto Island and Chimney Reefs. Its north and shoalest part lies nearly three-quarters of a mile northwestward from the north end of Ghegheto Island, and it trends in a southwesterly direction 300 yards (274^m3) to a depth of 10 feet (3^m0). The passage, south of Drake Shoal, only 150 yards (137^m2) wide, is buoyed and a depth of not more than 8 or 9 feet (2^m4 or 2^m7) can be carried in through very narrow gaps.

Chimney Reefs are a collection of low, dry rocks extending from the south end of Kolfage Island, southwesterly $1\frac{3}{4}$ miles affording good protection to an anchorage behind them. The reefs are fronted westward by shallow water for a distance of $1\frac{1}{2}$ miles.

Hattie Rock has less than 6 feet (1^m8) over it and is on the outer edge of the Chimney Bank. It lies in a westerly direction over three-quarters of a mile from the most westerly Chimney Reef.

Harrison Shoal is a quarter mile outside and westward of the rest of the bank, and has a least depth of 7 feet (2^m1) over its middle, distant nearly $1\frac{1}{4}$ miles, 285° , from the nearest Chimney Reef. The shoal is one-third of a mile long, northeast and southwest; and between it and Barrett Reef is a lane of deep water, whose sides converge and meet just outside Pike Point.

Clearing mark.—To pass west of all these shoals, keep Beament Island west of Cavalier Island, bearing 135° .

Kolfage Island, usually called **Green Island**, 6 feet (1^m8) high, is the northernmost of the Fishing Islands. It is nearly round, about 225 yards (205^m7) in diameter, and its most northerly point is situated half a mile southwestward from Pike Point, to which it is connected by very shallow water.

Anchorage.—The anchorage space inside and eastward of Ghegheto Island and Chimney Reefs is quite large, but has to be carefully used as there are many rocky spots, with 11 to 16 feet (3^m4 to 4^m9) over them, scattered about. The *Bayfield* frequently used this anchorage, as far north as Kolfage Island, and the mouth of Pike Bay, but buoys had to be placed both for entering and marking dangers near the north end of Chimney Reefs.

Lonely Island (Point) is situated $1\frac{1}{2}$ miles northeastward from Chiefs Point, and the bay between them is very shallow and foul. The island is also known as Lonely Point, being connected to the main shore by a sandy beach, covered at high water stages of the lake.

Oliphant is a small farming settlement, considerably increased in population during the summer season, situated about three-quarters of a mile north of Lonely Island. The Government wharf, with a face 81 feet (24^m7) in length, and providing accommodation for small craft only, is reached by a long narrow dredged channel.

Leading lights.—**Front.**—From a daymark on the boathouse at the wharf at Oliphant, a *fixed red* light is shown, at a height of 15 feet (4^m6).

Rear.—A pole with a white daymark, situated 740 feet (225^m5) 055° from the front light, exhibits a *fixed red* light, at a height of 25 feet (7^m6).

These lights in line indicate the dredged channel southeastward of Smoke-house Island.

Chart 2292.

Indian Point is a low, foul point $4\frac{2}{3}$ miles northward from Lonely Island, the gently sweeping shore between them being all low and very shallow, and composed mostly of sand and rushes protected by boulders. Only 6 feet (1^m8) can safely be carried, between Indian Point and **Corsair Reef**, lying half a mile west. 5

Red Bay, on the south entrance point of which is erected a small steam sawmill, situated one mile north of Indian Point, is $1\frac{1}{4}$ miles wide at its mouth and about half a mile long. As stated on page 00, only 9 feet (2^m7) can be carried southwest of Tyson Island, and barely 6 feet (1^m8) can be brought up from the south. There is a post office at Red Bay village at the head of the bay. The nearest railway station is at Wiarton, across the peninsula. 10

Lakes.—Inland, an average distance of about 2 miles from the shore between Oliphant and Red Bay, there is a string of small lakes, named in order northward, Boai, Spry, Isaac, Sky, and Beottic. 15

Howdenvale Bay (Golden Valley) is a small bay, whose narrow entrance is situated two-thirds of a mile southeastward from St. Jean Point (*see below*). It was formerly the site of a small sawmill. As before stated, 11 feet (3^m4) may be carried to the old wharves at Howdenvale, but the channel requires very careful navigation. It is straight from the anchorage north of Beament Island, but shallow rocks are dangerously near the track on both sides. 20

At **Howdenvale Village**, on the northwestern shore of the bay, is a Government wharf extending to a depth of $6\frac{1}{2}$ feet (1^m9) and there is the same depth in the berth, 125 feet (38^m1) in length, alongside.

Tyson Island shelters Howdenvale Bay from the southwest, and, like all the other islands, is low and covered with small trees. 25

St. Jean Point, with a very foul bank extending from it, is situated $1\frac{1}{4}$ miles 076° from Ghegheto Island.

Anchorage.—Between St. Jean Point and Chimney Reefs is an anchorage space a mile long north and south, by half a mile wide, but the master of a vessel must pick his ground, to avoid the rocky spots strewn about. 30

Coast.—From St. Jean Point, the shore forms a slight bow to the entrance to **Pike Bay**, distant nearly 3 miles north. The bay may be recognized by a small steam sawmill erected upon the east shore near the entrance. The bay is a quarter of a mile wide at the mouth and runs in a northeasterly direction for one mile, but is too shallow for anything but light draught craft. 35

Pike Point, lies half a mile northeastward from Kolfage Island, being connected therewith by very shallow water.

From Pike Point, the shoreline trends in a northwesterly direction, $2\frac{3}{4}$ miles to the south entrance point of Little Pike Bay, and half a mile nearer to Pike Point is **Purgatory Cove**, (*Lat. $44^\circ 54'$ N., Long. $81^\circ 22'$ W.*) which has shelter for small boats only. This stretch of shore is indented by slight points and bays, but Purgatory Cove is the only one in which even a boat can shelter. The bank off this locality is particularly foul even for this coast, and masters of vessels are advised to give it a berth of at least 2 miles, or not to proceed inside the 10-fathom (18^m3) line which is only a half mile west of Lincoln Shoal and Milton Bank. 40 45

Chart 2292.

Barrett Reef, awash, lies $1\frac{1}{2}$ miles westward from Pike Point. From this spot, the reef runs to the north one-third of a mile, and to the south 200 yards, (182^m9) being a quarter of a mile wide. No vessel should attempt to pass
5 between Barrett Reef and Pike Point, or inside the line of the three shoals next mentioned.

Milton Bank is another outlying danger, having upon it only 3 feet (0^m9) of water, and the shoalest part bears 285°, and is distant $2\frac{1}{4}$ miles from Pike Point. The shoal is over a third of a mile long in a north and south direction,
10 and a quarter of a mile wide.

Wells Shoal is small and lies half a mile outside the next mentioned. It has upon it a depth of 14 feet (4^m3) and bears 227°, distant 2 miles, from Little Pike Point.

Lincoln Shoal is a large bank with depths on it varying from 2 feet to 3
15 fathoms (0^m6 to 5^m5). The shoalest spot is on the east edge near the south end, and bears 207°, 1.6 miles from Little Pike Point. From it, the shoal extends southward half a mile, northwestward the same distance and northward one mile, the last with 13 feet (4^m0) at its north extreme, bearing 251° from Little Pike Point.

The narrow entrance to **Little Pike Bay** is half a mile southward from Little Pike Point. Good but limited anchorage for small craft can be had off the sawdust point on the south shore, in 3 fathoms (5^m5), but not more than 11 feet (3^m4) can be carried in through a narrow crooked channel with a very sharp turn in it. Inside the sawdust point, the bay rapidly shoals and is very
25 foul. Off the south entrance point, the northern edge of a very foul bank makes off southwestward nearly one mile, thence turning and running southerly the same distance. The deep water of the lake, in a narrow lane, reaches close to the entrance to Little Pike Bay.

Little Pike Point, half a mile north of the bay of that name, forms the
30 southeast entrance point to the shallow and foul bay southeast of Lyal Island. It is situated $2\frac{3}{4}$ miles, 140°, from the south point of Lyal Island, and except for the lane of deep water between Murton and Lyal Reefs, a vessel cannot pass northward of Little Pike Point.

Murton Reef, with 7 feet (2^m1) of water on it, is situated on the south-
35 western extremity of a large bank fronting the main shore southeast of Lyal Island. It lies $1\frac{1}{2}$ miles westward from Little Pike Point, and southward $1\frac{1}{2}$ miles from the south point of Lyal Island. The master of a vessel desiring to proceed farther north, may do so by keeping the rear lighthouse tower in Stokes Bay in line with the east side of Dane Island, bearing 020°.

The channel between Murton and Lyal Reefs is almost filled up by a couple
40 of reefs, on each of which is a depth of 13 feet (4^m0). Narrow lanes of deeper water separate them from each other and the two main reefs. From Murton Reef the south edge of the bank trends in a southeasterly direction $1\frac{3}{4}$ miles to the entrance of Little Pike Bay.

Lyal Reef is the long spit extending southwesterly 2 miles from the south
45 extreme of Lyal Island. At about mid-distance out, the reef is $1\frac{1}{4}$ miles wide, and is mostly very shallow, there being only 6 feet (1^m8) at half a mile from, and 12 feet (3^m7) close to, the end.

Chart 2292.

Wanderer Shoal, with 12 feet (3^m7) least water on its north end, lies a little under a mile southwestward from Lyal Island lighthouse. It extends southeasterly one-third of a mile, and the same distance southwesterly. A spot, with 17 feet (5^m2) of water over it, lies nearly a quarter of a mile west of Wanderer Shoal. 5

Channel east of Lyal Island.—A quarter of a mile southeast of the south point of Lyal Island is the northwestern edge of a lane of deep water. At this point, the lane is two-thirds of a mile wide, and 5 to 7 fathoms (9^m1 to 12^m8) deep, and extends in a northeasterly direction (gradually narrowing) to within three-quarters of a mile from Shute Point of Stokes Bay, but there is no passage between the latter and Lyal Island for any craft drawing more than 6 feet (1^m8). 10

Directions.—If for any reason the master of a vessel wishes to proceed east of Lyal Island, he can do so by bringing the rear range lighthouse tower, on Shute Point, in line with the southeast side of Dane Island, bearing 020° . This will take him to within a third of a mile of Dane Island, when he should feel his way a mile further northeastward by the chart, as no directions can be given. 15

Shute Point is situated $4\frac{1}{4}$ miles northward from Little Pike Point, and three-quarters of a mile northeast of **McMaster Point** of Lyal Island. It marks a sharp turn in the southeast shore of Stokes Bay and its very dark shade renders it conspicuous. 20

STOKES BAY.—The entrance to this excellent harbour lies between Greenough Point (see page 24) and Lyal Island. There are two navigable channels into the bay, one on either side of Mad Reef, but the southern is the only one used. When once entered, the anchorage space is over a square mile area, and any depth from 2 to 6 fathoms (3^m7 to 11^m0) can be had. Although the entrance is wide, no sea enters, being broken up by the many reefs outside. The harbour is frequented by fishing boats and tourist craft seeking shelter, which may be had from any particular wind by selecting one's berth. The navigation season is usually from April 15 to December 15, the ice breaking up about April 1. Wiarton is the nearest town. 25 30

It is reported that **Old Woman River**, a small stream flowing into the head of the bay, about 2 miles southward of Stokes River, is approximately 40 feet (12^m2) wide at the mouth. The depth of water in the channel is from 4 to 6 feet (1^m2 to 1^m8) for three-quarters of a mile where the river narrows to about 25 to 30 feet (7^m6 to 9^m1). The river affords shelter for small boats. 35

Lyal Island is about 25 feet (7^m6) high, covered with small trees, and shelters Stokes Bay from south winds. It has the shape of an irregular triangle, the north side trending westward $1\frac{1}{2}$ miles to the northwest point of the island. For the western three-quarters of a mile of this north coast, the deep water approaches to within 200 yards (182^m9), but half a mile west of McMaster Point the edge of the shoal water turns suddenly north, blocking any passage farther east. The southeast side trends southwestward 2 miles from McMaster Point to the sharp south point of the island. From the latter, the west coast trends northerly $1\frac{1}{2}$ miles to the northwest point, and is fronted by shallow water extending westward $1\frac{1}{4}$ miles. 40 45

Light.—On the most westerly point of the island, one mile from the sharp south point, is erected a white, square, wooden tower with keeper's dwelling attached, that from a height of 51 feet (15^m5) exhibits a *group flashing white* light, showing *two flashes every twenty seconds*, visible 14 (12 nautical) miles. 50

Chart 2292.

Knife Islands (*Lat.* $44^{\circ} 58' N.$, *Long.* $81^{\circ} 23' W.$), are a small group a third of a mile long east and west, by 250 yards (228^m5) wide, lying half a mile north of McMaster Point. The anchorage space of the bay approaches to within
 5 one-quarter of a mile of the islands, but shoal water connects the group with Lyal Island and Shute Point.

Buoy.—A red spar buoy marks the edge of shoal water northwestward of Knife Islands.

Leading lights.—Front.—On the northwest end of the most westerly
 10 of the Knife Islands Group is erected a white, square, wooden tower, that, from a height of 30 feet (9^m1), exhibits a *flashing red* light visible in the line of the range 11 (10 nautical) miles.

Rear.—On the main shore, situated a little more than three-quarters of a mile 069° from the front light, and between Irish Harbour and Shute Point,
 15 is erected a brown, square, steel skeleton tower with a 10-foot (3^m0) white enclosure at the top. The light is *fixed red*, 61 feet (13^m6), high and is visible in the line of range 15 (13 nautical) miles.

These two lights in one, lead within a third of a mile of the front light, or $1\frac{1}{3}$ miles northeast of Lyal Island light, with a least depth of 22 feet (6^m7) to
 20 be found when passing the inner black, and again at the inner red buoy.

Ripple Reef is a large shallow reef extending from the west side of Lyal Island. The outer end with 9 feet (2^m7) on it, bears 252° , three-quarters of a mile from Lyal Island light, but the more dangerous spot for vessels entering the bay has 9 feet (2^m7) over it and lies 285° , the same distance from the light.

Buoys.—A red spar buoy, moored 200 yards (182^m9) south of the range, marks this northwest spur of Ripple Reef. A similar buoy is placed three-quarters of a mile, 067° from the above, and marks the bank, which here extends only 250 yards (228^m5) from Lyal Island. The range passes only 50 yards (45^m7) north of the bank at this buoy. A red spar buoy marks the northwestern
 30 edge of the shoal water extending northwestward from Knife Islands.

Seashell Rock, with only 9 feet (2^m7) of water over it, lies half a mile westward of Ripple Bank, and 300 yards (274^m3) south of the range.

Buoy.—A red spar buoy marks this danger.

Saturn Rock, with 14 feet (4^m3) least water over it, may be said to be the
 35 outer rock off Lyal Island. It is small, and bears 261° , distant a little over $1\frac{1}{2}$ miles from Lyal Island light. The range leads one-quarter of a mile north of it.

Buoy.—A red spar buoy marks this danger.

Mad Reef is $2\frac{1}{2}$ feet (0^m7) high, without trees, a little over a quarter of
 40 a mile long northeast and southwest by 200 yards (182^m9) wide, and lies with its southwest point, bearing 335° , distant nearly one mile from Lyal Island light. Shoal water extends from it southwesterly half a mile, east one-quarter of a mile and northward, 200 yards, (182^m9), whilst on the northwest side of the reef the deep water reaches to within 100 yards (91^m4), and on the southeast side to
 45 within 200 yards (182^m9). The channel between this reef, and that from Greenough Point, is only 100 yards (91^m4) wide and is not used. That on the south side, 300 yards (274^m3) wide, is buoyed and is the only one used.

Chart 2292.

Buoy.—A black spar buoy marks the southwest end of the shallow water from Mad Reef.

A rock, with 17 feet (5^m2) least water over it, lies nearly one-third of a mile eastward from the northeast end of Mad Reef.

Cornet Ground is the outermost danger in the approach to Stokes Bay. It is a large bank two-thirds of a mile long northeast and southwest, by over a quarter of a mile in width. The least water on the ground is 9 feet (2^m7) a little northeast of the middle, which bears 289°, distant nearly 2¼ miles from Lyal Island light. There is only a depth of 11 feet (3^m4) at the southwest end. A shallow bank almost connects Cornet Ground and Greenough Bank (see page 24).

A rock, with 11 feet (3^m4) of water on it, lies a little inside the Cornet Ground and less than half a mile eastward of its shallowest part. Another shoal, with 17 feet (5^m2) of water over it, lies a little south of the same ground, a quarter of a mile northward of the line of leading lights. The former bears 292°, distant 1¾ miles, from Lyal Island lighthouse, and the latter 274°, distant 2 miles, from the same lighthouse.

Buoy.—A black spar buoy marks the 17-foot (5^m2) spot.

These are all the dangers north of the line of leading lights into Stokes Bay.

In thick weather or at night, do not shoal to less than 10 fathoms (18^m3), when off Lyal Island, or any of the shore between it and Cape Hurd.

Stokes River is a very small stream emptying into the northeast corner of Stokes Bay; boats can carry 3 feet (0^m9) to about 100 yards (91^m4) above the mouth.

On the west bank of the river, near its mouth, is situated the small village of **Stokes Bay**. A Government wharf, is located in the west side of the bay, three-quarter of a mile west of the mouth of Stokes River; at the outer end is a depth of 8½ feet (2^m5).

The entrance to **Irish Harbour**, a useless boat cove, is situated on the east shore of the bay, half a mile northward of Shute Point.

Garden Island, one-third of a mile long northeast and southwest by 300 yards (274^m3) in width, is about 10 feet (3^m0) high and covered with small trees. It lies 1¼ miles northward from Shute Point and two-thirds of a mile southwest of Stokes Bay village. Very shoal water connects it with the east shore of the bay, but vessels drawing 10 feet (3^m0) may anchor between the south end of the island and Tamarack Island.

A shallow spit extends from the southwest end of Garden Island in a south-westerly direction three-quarters of a mile, leaving a narrow lane, 300 yards (274^m3) wide, of deep water between it and the bank from Knife Islands, through which a vessel may pass close over to the east shore for a short distance.

Tamarack Island is small, half a mile long, very narrow, and just separated from the southeast shore of Ferguson Point. Its north end is well marked by a small steam sawmill and lumber piles. At the wharf, only about 6 feet (1^m8) of water will be found.

Buoys.—The passage between Garden and Tamarack Islands is marked by two black and two red spar buoys.

Chart 2292.

Ferguson Point, separating Stokes and Gauley Bays, is distant in a south-westerly direction nearly $1\frac{1}{4}$ miles from Garden Island. A spit makes off from this point southwesterly a quarter of a mile, to the depth of 13 feet (4^m0) and, south-southeasterly half a mile to the depth of 14 feet (4^m3), with only 11 feet (3^m4) at the distance of one-third of a mile. The southeast part of the point may be approached to 300 yards (274^m3).

A detached rock, with 16 feet (4^m9) on it, lies southward nearly two-thirds of a mile from the same point, thus almost connecting the spur from Ferguson Point to the bank from Knife Islands. To pass between, however, keep the lone hut at the west end of village of Stokes Bay in line with the west side of Garden Island, bearing 028° .

Gauley Bay is the long foul bay northwest of Ferguson Point, and no vessel should pass north of a line running east through the south end of Ferguson Point¹.

Greenough Point (Lat. $44^\circ 58' N.$, Long. $81^\circ 26' W.$), the northwest entrance point of Stokes Bay, is situated westward $1\frac{3}{4}$ miles from Ferguson Point. The point, sharp at the end, is about two-thirds of a mile wide one mile back, between the head of Gauley Bay and Greenough Harbour. Off the extreme point shallow water makes out in a southerly direction half a mile, whilst from its southeast side the bank extends over one-third of a mile. On the western side the bank is only 200 yards (182^m9) in width, but the southeast side should receive a berth of at least one-third of a mile.

There are several shoal spots between the point and the south end of Greenough Bank, but no one unacquainted should venture inside the outer reefs.

Directions.—A vessel should not shoal to less than 10 fathoms (18^m3) until the Stokes Bay leading lights are in line, bearing 069° . These should now be steered for, passing southeast of the black and northwest of the red spar buoy, with depth of 22 feet (6^m7). When Mad Reef is abaft the port beam, a vessel may haul northward of the range, and anchor in 5 to 6 fathoms (9^m1 to 11^m0), with Mad Reef bearing 229° , distant half to three-quarters of a mile. The passage westward of Garden Island should not be attempted by a stranger at night.

Simon Point, long and narrow, is situated nearly a mile northward from Greenough Point, the bight between them, called **Simon Bay**, being open and shallow. Simon Point, from which shoal water extends 200 yards (182^m9), forms the south entrance point of Greenough Harbour. It is behind Greenough Bank, from which it is separated by a lane of deep water half a mile wide.

Greenough Harbour.—The entrance to this excellent little boat harbour is north of and along the northwest side of Simon Point. A depth of 6 feet (1^m8) may be carried in, and perfect shelter found behind the north coast of Simon Point.

Greenough Bank is the northern bank of the string of shoals already described, extending $23\frac{1}{2}$ miles from Chiefs Point to Bradley Harbour. The north end of the bank is 297° , half a mile from Scotch Thistle Point, and the southwest extremity lies $1\frac{1}{2}$ miles 274° from Greenough Point, the nearest land.

The western edge of the bank, with 13 feet (4^m0) of water on it, lies a little over $1\frac{1}{2}$ miles southwest from Scotch Thistle Point. On the bank itself (over a mile wide) are many spots barely covered. A narrow lane, through which 20 feet (6^m1) can be carried, exists between Greenough Bank and the shore,

Chart 2292.

but should not be attempted by strangers. Southward of this bank is a small detached spot with 23 feet (7^m0) of water on it. It bears 266°, and is distant 2¼ miles, from Greenough Point.

Scotch Thistle Point is not very prominent, but marks the beginning of the very large Greenough Bank just described. It is situated 1¼ miles northward from Greenough Harbour. A rock, with less than 6 feet (1^m8) of water over it, lies over half a mile northward, and another 250 yards (228^m5) southward from Scotch Thistle Point. 5

Bradley Harbour is another foul bay fit only for small craft. Its entrance is 1½ miles northward from Scotch Thistle Point, the shore between taking the form of a slight bay, from which a bank extends nearly a quarter of a mile. The bay is very irregular in shape, about a quarter of a mile wide at the mouth and half a mile long. There are several rocks and islands in the bay. The shallow shorebank in the vicinity of Bradley Harbour is a quarter of a mile wide. A rock, with 15 feet (4^m6) of water over it, is situated a quarter of a mile southwestward of the northwest entrance point to the harbour. Another rock, with 18 feet (5^m5) over it, lies in the same direction nearly a mile from the same point. 10 15

Pleasant Bay is a shallow foul bay nearly a mile wide across its mouth and half a mile long, situated with its south entrance point nearly a mile northward from Bradley Harbour. At the head of the bay, the shore is broken and an inner cove formed, but the entrance is very shallow. The bank from the south entrance point is over half a mile wide. 20

French Harbour is a small boat cove in the south side of Pleasant Point, a third of a mile east from the end. 25

Pleasant Point, separating French and Little Pine Tree Harbours, forms also the northwest entrance point of Pleasant Bay. The shoal bank extends half a mile westward from the end of the point, but on the south side is not so wide. A rock, with 17 feet (5^m2) of water over it, is situated nearly a mile southwest from Pleasant Point. Another rock, with 21 feet (6^m4) of water on it, lies 241°, distant nearly 1½ miles from the same point. 30

A shoal, one-quarter of a mile in diameter, and having a least depth of 24 feet (7^m3) over it, lies southwestward distant 2¼ miles from Pleasant Point.

Juno Point, a mile northwest of Pleasant Point, is the projecting north entrance point of **Little Pine Tree Harbour**, which runs in nearly a mile eastward of it and affords limited but good shelter for small craft not drawing more than 5 feet (1^m5). From Juno Point, shoal water extends in all directions one-third of a mile. The entrance is 200 feet (61^m0) wide, with a depth of 6 feet (1^m8), and to the entrance 11 feet (3^m4) may be carried, by bringing it to bear 044°, to lead between two very shallow banks. A very shallow rock is situated exactly in the middle of the harbour. 35 40

A rock, with 15 feet (4^m6) of water on it, is situated half a mile southwestward from Juno Point.

Sibert Point, one-third of a mile northward of Juno Point, is insignificant and forms the southeast entrance point of Pine Tree Harbour. Shoal water extends from it half a mile in a southwest, and over a quarter of a mile in a west direction, or, almost to the range into the harbour. 45

Chart 2292.

Pine Tree Point is situated a mile northward from Juno Point, and from the south extremity of the former, shoal water extends in a southwesterly direction, one-third of a mile. Shallow water extends also southward a quarter
5 of a mile from Pine Tree Point.

Pine Tree Harbour, so called on account of two conspicuous pine trees that grew on the ridge at the back of the harbour, is 200 yards (182^m9) wide, and extends in a northeast direction nearly a mile from Pine Tree Point. A depth of 10 feet (3^m0) may be carried in, through a narrow channel, between very shallow
10 rocks.

It is not a harbour for a stranger to take in heavy weather as Gilphie Reef, lying off the entrance, will probably break. Those better acquainted can pass round the reef and pass through the narrow channel. **Zinkan Island**, lying on the east side of the channel into Pine Tree Harbour, is small and 5 feet (1^m5)
15 high.

Leading beacons.—Two white leading beacons are situated on the point, at the south side of the entrance to Pine Tree Harbour. The beacons are 300 feet (91^m4) apart and in line, bearing 040°, lead into the harbour.

Gilphie Reef with 13 feet (4^m0) least water over it, is a large bank lying
20 directly in front of the entrance to Pine Tree Harbour. It is a third of a mile in diameter, and its middle and shoalest part lies southwestward, distant two-thirds of a mile from the south end of Pine Tree Point. There is a narrow lane of good water between Gilphie Reef and the shoal bank from Sibert Point.

Deadman Point (*Lat. 45° 05' N., Long. 81° 31' W.*), is situated three-
25 quarters of a mile northwestward from Pine Tree Point, the bay between them being foul and useless. Deadman Point, gradually rounding, is beset with shoal water to the extent of over a quarter of a mile.

Terry Point, the southeast entrance point of the bay containing Johnston Harbour, is situated 2³/₄ miles northwestward from Deadman Point, the slightly
30 concave shore between them being broken up into several unimportant coves, bays, and points lined with shallow water, with a width of a third of a mile. It is steep-to on the harbour side, but a spit makes out a quarter of a mile, in a southwesterly direction, from its most southerly part.

Johnston Harbour is a small well-sheltered cove at the head of a bay
35 running in northeastward three-quarters of a mile from Terry and Johnston Points. The entrance to the harbour is northeastward of the inner narrow northeast extremity of Johnston Point. For the first quarter of a mile, after passing the outer extremity of Johnston Point, the southeast side of the point should receive a berth of 200 yards (182^m9). After passing the stone beacon, a quarter
40 of a mile northeastward, the beach may be kept closer aboard until near the turn in to the wharf.

Anchorage.—Limited anchorage can be had in the bay of approach to Johnston Harbour, but, of course, is exposed to southerly and southwesterly winds.

Johnston Point, low, is situated a third of a mile northwest from Terry
45 Point, and forms the west entrance point, and gives shelter to the bay containing Johnston Harbour.

Chart 2292.

Huntress Reef, with depths of less than 6 feet (1^m8), is the spit extending southwesterly, half a mile from Johnston Point. At a distance of three-quarters of a mile, in the same direction from the point, there is a depth of 24 feet (7^m3).

Corisande Bay is an unimportant bay, with its north shore running in nearly a mile eastward from Porcupine Point, which bears northwestward from the southeast entrance point of the bay distant nearly a mile. No vessel should pass inside the line of these points. 5

A shallow spit extends from this southeast entrance point westward a little over half a mile, leaving a lane of deeper water penetrating slightly into the bay, southward of Porcupine Reef. 10

Porcupine Point, bare and low, is situated a little more than $1\frac{3}{4}$ miles northwestward of Johnston Point. Deep water approaches close to the point, on the west side, but a reef, with 15 feet (4^m6) least water on it, lies 279° , distant nearly three-quarters of a mile from the point. 15

Porcupine Reef is a long narrow very shoal spit extending two-thirds of a mile in a southwest direction from the point of the same name.

Cataract Rock is a small spot, with 17 feet (5^m2) of water on it, lying a quarter of a mile farther from Porcupine Point in the same direction.

Another reef, with 17 feet (5^m2) least water on it, lies 207° , distant two-thirds of a mile, from Porcupine Point. 20

Coal Oil Point, small and narrow, lies northward two-thirds of a mile from Porcupine Point, the bay between being open and very foul, the flat extending nearly a third of a mile outside the line of the points. It is chiefly important as forming the south entrance point of Little Eagle Harbour. 25

A rock, with less than 6 feet (1^m8) of water on it, is situated southwestward, over a third of a mile from Coal Oil Point.

Little Eagle Harbour is a small but good boat harbour, into which 18 feet (5^m5) may be carried through a narrow channel, by steering 060° for Coal Oil Point and passing close northwest of it. 30

Little Eagle Point (Eagle Point) is situated two-thirds of a mile westward from Coal Oil Point, and is surrounded by shoal water for a distance of a quarter of a mile. Off the point are two small spots, with 23 feet (7^m0) least water on them, the outer one lying 279° , distant one mile.

Campbell Reef is a very dangerous narrow obstruction with 11 feet (3^m4) least water on it, lying $1\frac{1}{2}$ miles southwesterly from Little Eagle Point, and from it the shoal extends a quarter of a mile west, and over a third of a mile eastward. A vessel will pass half a mile south of Campbell Reef, by keeping the trees on Cape Hurd just in sight southwest of Baptist Island, and bearing 320° . 35

Coast.—From Little Eagle Point, the shore trends over a mile in a northerly direction, and thence northeastward a little less than 2 miles, forming the southeast shore of **Dorcas Bay**. The first stretch has shoal water extending from it a quarter of a mile. This bay measures a little over one mile across its mouth in a southeasterly direction from Pendall Point, whence it trends northeastward nearly $1\frac{3}{4}$ miles. The whole bay is foul and useless. 40 45

Chart 2292.

Pendall Point bears 343° , distant 2 miles from Little Eagle Point, and has shoal water extending from it a quarter of a mile.

Warner Point, $1\frac{1}{2}$ miles westward from Pendall Point, is a long crooked point shaped like a boot, the toe pointing westward. It may be recognized by being composed of large limestone gravel, and stones, piled nearly 10 feet (3^m0) high. Shoal water makes out from it, westward a quarter of a mile and southward a third of a mile, whence it runs eastward straight to the south edge of the bank off Pendall Point already mentioned. On the northwest side, the deep water comes close in.

Eagle Harbour is the large bay between the two points last mentioned. It is very shallow and foul.

Warner Bay forms one of the anchorages on this shore, the best place for shelter being about 300 yards (274^m3) northward of the western extreme of **Warner Point**, or the toe of the boot, in 3 or 4 fathoms (5^m5 or 7^m3), over sand and mud.

Youell Island, small and 5 feet (1^m5) high, lies close to the shore and two-thirds of a mile westward of Warner Point, from which line Warner Bay runs in three-quarters of a mile in a northeast direction with a width of a third of a mile. Shoal water extends 300 yards (274^m3) south from the island.

Hopkins Point (*Lat.* $45^\circ 11' N.$, *Long.* $81^\circ 40' W.$), the south entrance point of the bay of the same name, is situated $1\frac{1}{3}$ miles westward from Warner Point. It is rather sharp and low, with shoal water extending from its south side one-quarter of a mile, and westward 300 yards (274^m3).

A rock, with 6 feet (1^m8) of water on it, bears 327° , and is distant a little over one-third of a mile from the southwest extremity of Hopkins Point. It is on the very edge of the bank from the east shore of the bay.

A rock, with 21 feet (6^m4) least water upon it, lies 192° , distant nearly $1\frac{1}{4}$ miles from Hopkins Point. Midway between the rock and the point, the depth is 24 feet (7^m3).

A narrow shoal, trending half a mile eastward, and westward, with 21 feet (6^m4) least water on its eastern end, lies 270° , distant one mile, from Hopkins Point, with deep water on all sides.

Hopkins Bay, the head of which is nearly $1\frac{1}{4}$ miles northward of Hopkins Point, is about the same distance wide in a northwest direction from the same point and is open to southwest winds. There is an anchorage in the bay, near its north shore, but to reach it a bar, with not more than 13 feet (4^m0) on it, must be crossed.

From the northern side of Hopkins Point, an ugly shallow bank extends nearly half-way across the bay. The northern part of the shore is gradually rounding, and thence runs nearly straight to Baptist Island, with shallow water fringing it with a width of 200 yards (182^m9).

Baptist Island is small and conspicuous when seen from the direction of Cape Hurd. It lies 100 yards (91^m4) off a sharp point, and 295° , distant $2\frac{1}{4}$ miles from Hopkins Point. Shoal water extends from it 200 yards (182^m9) south, and a quarter of a mile westward.

Chart 2292.

Baptist Rock is a small spot, with 18 feet (5^m5) over it, lying two-thirds of a mile southward from Baptist Island. There are two other spots inside this rock with 19 feet (5^m8) on them.

Arbutus Rock, small, with 17 feet (5^m2) least water on it, lies 1½ miles, 5 194° from the most westerly part of Cape Hurd. Another small rock, with the same depth over it, lies 1½ miles, 165°, from the same part of the cape.

Another shoal, small in extent, having 24 feet (7^m3) least water upon it, lies close to the 10-fathom (18^m3) line, with deep water on all sides. It bears 196°, distant 2 miles, from Baptist Point, and 251°, distant 2½ miles, from Hopkins 10 Point.

Baptist Harbour, called also **Pilot Cove**, is a small narrow area in the head of the bay nearly a mile northward of Baptist Island, and nearly 1¼ miles eastward of Cape Hurd. The shore of the bay between Baptist Island and Cape Hurd is broken into several small shallow coves and low points, and has 15 shallow water extending from it a distance of one-third of a mile.

Into Baptist Harbour, only 10 feet (3^m0) can be carried through a narrow channel that should be buoyed before using. Anchorage for a short vessel and perfect shelter may be had just inside the mouth.

Cape Hurd is very low and covered with a small growth of trees. The 20 water off the cape is good outside a bank 300 yards (274^m3) wide.

In thick weather or at night do not shoal to less than 10 fathoms (18^m3) when off Cape Hurd.

[For further description of Cape Hurd, together with the islands and dangers in the entrance to Georgian Bay, see Chapter IV.] 25

CHAPTER II

WEST SHORE OF LAKE HURON

St. Clair River to Strait of Mackinac

Datum.—See Page 1.

5 **Note.**—The United States shore is herein described but briefly, only the principal ports and aids, outstanding dangers and prominent geographical features being noted. For details of harbour facilities and aids and more minute descriptions of the coast and waters, the "Great Lakes Pilot," issued by the U.S. Lake Survey Office, Detroit, should be consulted.

10 *United States Chart 51.*

Charts.—For charts and sailing directions of these shores and waters apply to United States Lake Survey Office, Detroit, Michigan.

 From Fort Gratiot light northward to **Forestville** for about 46 miles the off shore holding is generally good.

15 At Lexington, $21\frac{1}{2}$ miles north of Port Huron, the anchorage is an open roadstead; there is a dock in poor condition, with 8 feet (2^m4) of water.

 From **Lexington** to Port Sanilac the coast is rocky and can be approached to within one mile.

20 **Port Sanilac light** (*Lat. $43^{\circ} 26'$ N., Long. $82^{\circ} 32'$ W.*), 30 miles above Fort Gratiot light, shows a *group flashing white light every ten seconds*, visible 16 miles.

Harbour Beach, about 60 miles north of Port Huron, is an artificial harbour consisting of a large area enclosed by breakwaters. There is a depth of 22 feet (6^m7) in the entrance, and portions of the enclosed basin have been deepened to
25 20 feet (6^m1). It affords good protection from all winds, and is the only safe refuge on the west shore from the foot of the lake to Tawas Bay, a distance of about 120 miles.

Light.—**Radio beacon.**—The east entrance north light shows *alternate white and red flashes* and is visible about 15 miles.

30 There is a radio beacon at the light.

 There is a **Coast Guard** station and **Storm Warning Signal** station at Harbour Beach.

Port Hope, Michigan, lies 7 miles north of Harbour Beach. It has a dock, in very poor condition, and 8 feet (2^m4) of water over the bar. Good holding
35 ground is found east and north of Port Hope, in depths of 6 and 7 fathoms (11^m0 and 12^m8).

Pointe aux Barques light, *flashing white* and visible 18 miles, is distant 75 miles northward from Fort Gratiot light. It marks the turning point to Saginaw Bay and is situated to the eastward of Huron City.

Chart 2200, United States Chart 52.

Light-and-bell-buoy.—A dangerous reef, with a depth of 2 feet (0^m6) near its outer end, extends easterly 2 miles from Pointe aux Barques and is marked by a black light-and-bell-buoy moored in 36 feet (11^m0) of water.

From Pointe aux Barques light to Pointe aux Barques, 9 miles north-westerly, ledges and detached rocky spots render the coast dangerous within 3 miles from shore. 5

Port Austin, 2 miles southwest of Pointe aux Barques, is situated on the shore of a shallow bay.

Radio beacon.—There is a radio beacon at Port Austin. 10

Port Austin Reef light is built on Port Austin Reef and shows a *flashing red* light visible 12 miles.

Saginaw Bay is the largest indentation along the west shore of Lake Huron; at its entrance between Pointe aux Barques and Au Sable Point, it is 26 miles wide and from this line southwesterly to its head at Saginaw River, the distance is 51 miles. 15

Charity Islands are situated about midway within the entrance of Saginaw Bay, on the rocky portion of an extensive bank, that extends northwestward for 12 miles from Sand Point on the east shore of the bay.

Light.—**Fog signal.**—**Radio beacon.**—On **Gravelly Shoal**, located 5 miles southwestward of Charity Islands, a *flashing white* light is shown, at an elevation of 75 feet, (22^m9) from a square white tower; the light is unwatched and is visible 16 miles. 20

A fog diaphone sounds *one* blast every 30 seconds.

There is a radio beacon at the station. 25

The main steamer track is to the westward of Charity Islands and is marked by **light-and-bell-buoys**.

Bay City, 3 miles within the mouth of **Saginaw River**, which enters the bay at the southern end, is the principal port in Saginaw Bay.

A channel, 200 feet (61^m0) wide, has been dredged from deep water in Saginaw Bay to Bay City to a depth of 21 feet (6^m4); a project for improvement provides for a depth of 20 feet (6^m1) to Saginaw and thence 16½ feet (5^m1) to the junction of the Tittabawassee and Shiawassee Rivers, a total distance of about 26 miles. 30

Lights and buoys.—The sides of the channel in the bay are marked by light-buoys, and leading lights lead in mid-channel. 35

Storm warning signals are displayed at Bay City.

Tawas Bay lies at the westerly entrance of Saginaw Bay. It is an excellent harbour, affording secure anchorage at its head in 20 to 24 feet (6^m1 to 7^m3), in all winds except from the southwest. 40

Tawas light, near the southwest end of Tawas Point, the east entrance point of Tawas Bay, is an *occulting white* with *red* sector, and visible 16 miles. There is a fog-alarm diaphone signal near the lighthouse.

Coast Guard and **Storm Warning Signal** stations are located at Tawas Point. 45

Chart 2200, United States Chart 52.

Docks.—At **Tawas City** some of the old dock remains have been repaired, and put in fair condition, for use by the fishermen. At **East Tawas**, the dock at the State Park has a depth of about 13 feet (4^m0) at the outer end. There are
5 several fish docks in good condition.

Au Sable Point is distant about 8 miles northeastward from Tawas Point, and has shoal water around it extending out for a distance of 1 $\frac{1}{4}$ miles. Under this point there is good holding ground and protection from winds from north to west.

10 **Light-and-bell-buoy.**—A black light-and-bell-buoy is moored in about 40 feet (12^m2) of water off the point, and marks the limit of safe approaches on its east side.

Oscoda is a town located at the mouth of **Au Sable River**, 5 $\frac{1}{2}$ miles north of Au Sable Point.

15 **Light.**—Au Sable pierhead light is *occulting red* and visible 13 miles.

United States Chart 53.

Sturgeon Point light, 21 miles northward of Au Sable light, is on the most easterly point between Saginaw and Thunder Bays and is *flashing white* and visible 16 miles.

20 Next to Saginaw Bay, **Thunder Bay**, is the most prominent indentation on the west shore of Lake Huron. The extreme points are **North** and **South Point**, 10 miles apart, and, the distance northwesterly from a line joining these two points to the head of the bay is about 9 miles.

The bay affords shelter, in all but southeasterly gales, and good holding
25 ground is found generally under the shores. The north shore from **Whitefish Point** to North Point affords a good lee in heavy northeast gales, in depths of 4 to 5 fathoms, (7^m3 to 9^m1) close to shore.

Most of the southwesterly shore is fronted by shoals and flats, but the
30 northerly shore inside of North Point may be safely approached to within one mile.

North Point red light-and-bell-buoy, fitted with a radar reflector, is moored off the end of a shoal that extends for 1 $\frac{1}{2}$ miles southeasterly from North Point, with only 5 feet (1^m5) of water near the outer end. The buoy marks the turning point for vessels entering or leaving Thunder Bay.

35 **Alpena Harbour**, (*Lat. 45° 04' N., Long. 83° 25' W.*), a port of considerable size, is located at the head of Thunder Bay.

An approach channel from the bay has been dredged to 21 feet (6^m4) for the most part and extends up Thunder River for nearly a mile above the Alpena lighthouse.

40 **Light.—Fog signal.—Radio beacon.**—Alpena light, *occulting white*, and visible about 14 miles, is on the north side of the entrance to the river. There is a fog signal at the lighthouse.

There is a radio beacon at the station.

A number of docks extend from shore on both sides of the river mouth,
45 but the principal deepwater wharves are within the mouth.

Chart 2200, United States Chart 53.

Huron Portland Cement Company's docks are located nearly one mile northeasterly from Alpena light and have slips with 20 feet (6^m1) of water in them. An approach channel, dredged to 20 feet (6^m1), leads to these from deep-water and its limits are marked by spar buoys. 5

Leading lights, *fixed red*, lead in through the approach channel to the Huron Portland Cement docks.

Light-buoy.—A light-buoy, painted in red and black horizontal bands, is moored at the outer end of the channel, at its intersection with the Alpena approach channel. 10

Thunder Bay Island is the outermost of three islands lying 3 miles northeasterly from North Point. The water is deep close up to the island's outer or easterly shore. Large vessels should not attempt to pass between Thunder Bay Island and the mainland.

Light.—**Fog signal**.—**Radio beacon**.—A *flashing white* light, visible 15 16 miles, is located on the east shore of Thunder Bay Island.

A fog signal and radio beacon are established at the station.

Coast Guard and **Storm Warning Signal** stations are located on the southwest side of Thunder Bay Island.

Middle Island light.—**Fog signal**.—Middle Island lies about 11 miles 20 northwesterly from Thunder Bay Island, and is 1 $\frac{3}{4}$ miles off the mainland. On its eastern shore is an *occulting green* light, visible 17 miles.

There is a fog signal at the lighthouse.

Rockport is a private harbour of the Kelley Island Lime and Transport Company located about 2 miles westerly from Middle Island. There is a loading 25 dock with 23 feet (7^m0) of water alongside; a dredged channel 21 feet (6^m4) deep leads from deep water.

False Presque Isle Harbour lies 18 miles northwesterly from Thunder Bay. It is secure for winds from southwest around through north to northeast, with fair anchorage in 20 to 30 feet (6^m1 to 9^m1). Some boulder shoals lie 30 directly in the entrance.

Presque Isle light, *fixed white*, visible 20 miles, is situated near the northerly end of Presque Isle Peninsula, about 12 miles up the shore from Middle Island. It marks the turning point for the Straits of Mackinac.

A fog signal station is located at the lighthouse. 35

Presque Isle Harbour—Leading Lights.—This is a bay 1 $\frac{1}{2}$ miles south of Presque Isle light. It affords a safe but limited harbour and anchorage for small vessels in 3 and 3 $\frac{1}{2}$ fathoms (5^m5 and 6^m4). There is a bar across the entrance. Two *fixed green* lights in line lead across into the harbour, in about 10 feet (3^m0) of water. 40

North Bay is an indentation immediately west of Presque Isle Peninsula, protected by the latter. It affords shelter in easterly and southerly winds, but the bottom is rock. There is a shoal, with 14 feet (4^m3) over it, lying about the middle of the bay, and the prevailing depths range up to 30 feet (9^m1).

The rear light of Presque Isle Harbour range is visible from the northward 45 and serves as a guide for vessels entering North Bay.

Chart 2200, United States Chart 53.

Forty Mile Point.—Light.—Fog Signal.—The point is about 22 miles northwestward from Presque Isle. A light, *occulting white*, and visible 16 miles is shown below the top of the bluff.

5 A fog signal station is located at the lighthouse.

Rogers City is a port about 6 miles southeastward from Forty Mile Point. It is an open roadstead with no natural harbour.

The approach is obstructed by a bar, with depths 7 to 10 feet (2^m1 to 3^m0), through which a channel has been dredged to a depth of 14 feet (4^m3).

10 **Calcite**, about $1\frac{1}{2}$ miles east of Rogers, is a private harbour, with a breakwater and loading slip. Because of water fluctuations in the harbour, incoming vessels drawing over 17 feet (5^m2) of water should obtain information from the harbour tugs before passing the breakwater.

Lights.—Fog signal.—There is an *occulting red* light on the breakwater, 15 visible 14 miles, and a fog signal. *Fixed red* leading lights, to be used by vessels when entering, mark an alignment through the southerly side of the harbour. A range of *green* lights, at lower elevations than the red lights, are to be used by departing vessels.

United States Chart 6.

20 **Hammond Bay**, 6 miles west of Forty Mile Point, is a large open indentation which affords shelter in all winds from southeast, through, south, to northwest, with fair anchorage in 4 and 5 fathoms (7^m3 to 9^m1) off the mouth of **Ocqueoc River**.

Cheboygan Harbour is about 30 miles northwestward from Forty Mile 25 Point light, and on the shore of South Channel leading to the Straits of Mackinac.

A channel, $18\frac{1}{2}$ feet (5^m7) deep, has been dredged from deep water into the **Cheboygan River** which flows through the port.

Lights.—Cheboygan crib light, in the entrance, is *flashing red* and visible 12 miles.

30 There is a **fog-bell** at the crib light.

Leading lights lead into the river.

Bois Blanc Island, forming the north side of **South Channel** opposite the Cheboygan Shoal is $11\frac{1}{2}$ miles long and $4\frac{3}{4}$ miles in width.

Cordwood Point is 24 miles northwestward of Forty Mile Point. An 35 irregular rock reef, with patches 20 to 24 feet (6^m1 to 7^m3) deep, extends $1\frac{3}{4}$ miles northeasterly from this point. In stormy weather with heavy rolling, it is a menace to deep-draught vessels using the South Channel of the Straits of Mackinac.

Poe Reef (*Lat. $45^{\circ} 42' N.$, Long. $84^{\circ} 22' W.$*), on the north side of the vessel 40 channel through South Channel, is an outlying shoal with a least depth of 8 feet (2^m4).

Light.—Fog signal.—Radio beacon.—A *group flashing white* light, showing *two* flashes, *every 10 seconds*, and visible 16 miles, is shown on the southerly part of the reef. A fog signal is made and a radio beacon is operated at this 45 station.

Chart 2200, United States Chart 6.

Light.—Fog signal.—Radio beacon.—Old Mackinac Point light is on the south side of the Straits of Mackinac and marks the turning point from Lake Huron to Lake Michigan. The light is *flashing white* and visible 16 miles.

A fog signal station and radio beacon are located at the lighthouse.

5

Mackinaw City and **Port** are located on Old Mackinac Point.

Bois Blanc light is situated on the northeast point of a narrow point of land protruding northward from near the easterly end of Bois Blanc Island. It is *flashing white* and visible 10 miles.

Raynolds and **Spectacle Reefs** lie east of Bois Blanc Island, distant 7 and $10\frac{1}{2}$ miles, respectively. The former has 11 feet (3^m4), the latter 5 feet (1^m5) least depths of water.

Light.—Fog signal.—Spectacle Reef light is *flashing white* and *red* and visible 17 miles.

There is a fog diaphone at the lighthouse.

15

There is deepwater between the two reefs, and between these and Bois Blanc Island.

North Channel, Straits of Mackinac, lies between **Round Island** (off the northwestern end of Bois Blanc Island) and Mackinac Island and there is an available width of 1,250 feet (381^m0) in 27 feet (8^m2) of water through this passage leading to the straits.

Light and buoys.—Round Island Passage light, *occulting green*, on the north side of the channel, and four light-buoys mark the passage.

There is a **fog signal** station and **radiobeacon** at the lighthouse.

Mackinac Island, on the north side of North Channel has located, on the shores of a semicircular bay at the southeast end, the City of Mackinac Island, with a small harbour, two landing wharves, and coaling station. There are depths of 14 to 21 feet (4^m3 to 6^m4) at the wharves.

St. Ignace is a railway and steamship terminal port located in **East Moran Bay**, opening to the eastward on the northerly side of Graham Point of the Michigan mainland, just north of the Straits of Mackinac. Numerous railway and other docks extend out to deepwater with lights on their outer ends.

St. Martin Bay, in the mouth of which lie the two **St. Martin Islands**, is on the north shore, about 7 miles north of Mackinac Island. There are three deep passages into the bay, which extends from $3\frac{1}{2}$ to $5\frac{1}{2}$ miles northward inside the islands, having depths of 4 fathoms (7^m3) to within one mile of the shore.

Shoal water reaches over one mile south of St. Martin Island.

St. Martin Point forms the east side of St. Martin Bay and between it and **Brulée Point**, the next point eastward is **Search Bay**, 2 miles long and $1\frac{1}{2}$ miles wide and shoal in its upper portion.

40

Les Cheneaux Islands comprise an extensive group, filling the north coast from Brulée Point for about 15 miles eastward. The islands and their neighbouring shoals, as well as the numerous points jutting among them from the irregular mainland coast, have a characteristic trend from northwest to southeast. The

Chart 2200, United States Chart 6.

many inlets and channels between them have considerable deep water, but are so obstructed by banks and detached shoals, as to be practically impassable, except by small craft.

- 5 **Light.**—There is a *fixed white*, privately maintained, light on the south end of Island No. 8.

Goose Island lies 2 miles southwesterly from Marquette Island; it is about half a mile long and narrow, with a rocky shoal extending a mile to the southward. There is deep water between it and Marquette.

- 10 **Goose Island Shoal** is a dangerous detached reef lying 3 miles southwest of Goose Island, with a least depth of 2 feet (0^m6). It is marked on its east side by a black can buoy, and on its west end by a red conical buoy.

Martin Reef is the outermost of a string of shoals extending from 4 to 5 miles southeasterly from the eastern ends of Les Cheneaux Islands.

- 15 **Light.—Fog signal.**—This reef is a menace to navigation lying close inside the track of vessels from Detour Passage to the Straits of Mackinac. Martin Reef light is on the southeasterly part of the reef and is *group flashing white* visible 16 miles.

There is a fog diaphone at the lighthouse.

- 20 **Pomeroy, Tobin and Surveyors**, are detached reefs, lying between Martin Reef and Les Cheneaux Island, and have 13 feet (4^m0), 2 feet (0^m6), and one foot (0^m3), respectively, over them.

- 25 Between Les Cheneaux Islands and Point Detour, about 12 miles eastward, there are numerous outlying shoal patches, and the coasts should not be approached within $1\frac{1}{4}$ miles.

Detour light (*Lat. 45° 59' N., Long. 83° 54' W.*).—This is located on Detour Reef and marks the west entrance point of Detour Passage, leading from Lake Huron into St. Mary's River. (See page 62).

(For *St. Marys River*, see Chapter XII.)

CHAPTER III.

HUNGERFORD POINT TO DETOUR PASSAGE

Datum.—See Page 1.

Charts 2298, 2200.

Manitoulin Island, reaching from Georgian Bay for two-thirds of the distance across the northern end of Lake Huron, and separated from the north mainland shore by North Channel, has been described as the largest island in fresh water, anywhere in the world. It is about 80 miles long east and west, and has a general width of from about 6 miles at its west end to about 30 miles at its east end. In places, the width is contracted to less than 3 miles by large bays lying within lines joining its headlands. It has an area of 1,223 square miles. 5 10

Its south, or Lake Huron, coast extends from the Owen Channel entrance to Georgian Bay northwesterly to Mississagi Strait. Its east shore borders on Georgian Bay and its deeply indented north shore forms the major part of the south shore of North Channel. 15

Within the island are many lakes, the largest of which, **Lake Manitou**, is over 15 miles long and lies near the eastern end close inland from Manitowaning. Two other large lakes are **Mindemoya** and **Kagawong**, located south of West Bay and Mudge Bay, respectively. 20

The island was formerly known as The Grand Manitoulin, being the largest of the group from Georgian Bay to St. Marys River, and originally designated as The Manitoulin.

The population of the island is about 10,000 of whom some 2,000 are Indians living on reserves. 25

Its principal towns and ports are Little Current on North Channel (see page 283), Manitowaning (see page 273) and Gore Bay (see page 342), also on the north shore, and South Baymouth and Providence (see pages 39 and 45) on the south or Lake Huron coast.

Chart 2298.

Hungerford Point (Lat. 45° 31' N., Long. 81° 50' W.), the most southerly extreme of Manitoulin Island, may be known by its small white stony beaches. Scattered stones and shallow water extend from this point a quarter of a mile in a southwest direction, but the southeast side is steep-to. (See page 84.) 30

From Hungerford Point, the shore trends in a general northwesterly direction $4\frac{3}{4}$ miles to the southeast entrance point of **Thomas Bay**. The low shore is indented by insignificant bays, and fringed with boulders and very shallow water, for a distance of 300 yards (274^m3), the 5-fathom (9^m1) line extending as much as half a mile. The shores of this large open indentation are clean outside the distance of 200 yards (182^m9). The anchorage in, and shelter from, all but southerly winds is excellent, the best track in being close to the southwest entrance point. The mouth is a mile wide, and the bay runs $1\frac{3}{4}$ miles in a northeasterly direction. 35 40

Chart 2298.

Mayflower Island is a small partly-wooded island lying two-thirds of a mile southward from the southeast entrance point of Thomas Bay. A spit extends from it, southwestward for a third of a mile.

- 5 **Vigilant Rock**, with $13\frac{1}{2}$ feet (4^m1) of water over it, is the southerly termination of a spit from Manitoulin Island. It lies three-quarters of a mile off the shore one mile southeastward from Mayflower Island.

Grantham Shoal, with $7\frac{1}{2}$ feet (2^m2) of water on it, is small and lies southward three-quarters of a mile from the same island.

- 10 The mouth of Thomas Bay is partly obstructed by reefs, most important of which is **Todman Reef**, with 7 feet (2^m1) of water over its south end, distant over three-quarters of a mile from the southeast entrance point. The reef is narrow and a third of a mile long in a northeast direction.

- 15 Two spots, with 16 and 18 feet (4^m9 and 5^m5) over them, lie to westward 300 and 500 yards (274^m3 and 457^m2), respectively, from Todman Reef. There is a channel 300 yards (274^m3) wide between Todman Reef and the shoal water from the southeast entrance point of Thomas Bay.

- 20 **Clearing mark.**—To pass southwest of Todman Reef, Grantham Shoal, and Vigilant Rock keep **Black Summit** of Yeo Island in line with the west end of Perseverence Island, bearing 136° .

Thomas Point (*Lat.* $45^\circ 32' N.$, *Long.* $81^\circ 58' W.$), the northwest entrance point of Thomas Bay, has a spit, with depths under 5 feet (1^m5), extending from it in a southerly direction over one-third of a mile.

- 25 **South Bay** is a large inlet on the south coast of Manitoulin Island, $8\frac{1}{2}$ miles from Hungerford Point its southeast extremity. It trends in a general northeasterly direction $15\frac{1}{2}$ miles from the entrance and has a maximum width of nearly 3 miles. South Bay and Manitowaning Bay, the latter situated on the north side of Manitoulin Island, are separated by a distance of less than 2 miles.

- 30 It is composed of two wider portions, or lakes connected by **The Narrows**, two-thirds of a mile wide, situated 4 miles from the entrance. The southwestern lake widens out at a mile from the entrance, is nearly 3 miles long, and averages $1\frac{1}{4}$ miles in width. Outside a bank 300 yards (274^m3) wide along the shores, the water is from 5 to 7 fathoms (9^m1 to 12^m8) deep over mud, forming an
35 excellent anchorage.

- The northeastern and larger portion has a length of 10 miles, its northwest shore being composed of several slight bays and unimportant points. The banks from the points are narrow, but broader in the bays, and that from the low, swampy head of the bay, under the depth of 3 fathoms (5^m5), is more than
40 a mile broad. The southeast shore from the head to the mouth of Roberts Bay, and from Benson Point to The Narrows is steep-to. The middle of the bay has depths of 20 to 32 fathoms (36^m6 to 58^m5).

- The northwest shore gradually rises, and, at a little over a mile back is surmounted by a bare limestone cliff, in places 300 feet (91^m4) high. The south-
45 east shore is surmounted by a high, well-wooded, limestone cliff reaching for the most part to the shore.

Small craft, approaching South Baymouth from the southeastward, should not approach the south coast of Manitoulin Island at less than a quarter of a mile.

Chart 2271.

McGaw Point, the southeast wooded entrance point of South Bay, lies $2\frac{3}{4}$ miles northward of Thomas Point. About one mile southeast from McGaw Point is a slight bay, fronted by a very shallow bank, half a mile wide, but the rest of the shore may be approached to 200 yards (182^m9). From McGaw Point itself, a rocky ledge, with a depth of 7 feet (2^m1) over it, lies 200 yards (182^m9) northward; westward for 200 yards (182^m9) to a depth of 13 feet (4^m0); and southward for a quarter of a mile to a depth of 8 feet (2^m4). The northeast side of McGaw Point is steep-to. 5

Buoy.—A red conical buoy, which serves as a turning buoy for the entrance into South Bay, is moored northwestward of McGaw Point. 10

Wallace Rock, with a depth of 11 feet (3^m4) over it, lies about a mile south-southwestward of McGaw Point, and is the only outlying danger off the entrance to South Bay.

Buoy.—**Light-buoy.**—A red spar buoy is moored off the western side of Wallace Rock. A red light-buoy, showing a *flashing red* light, is moored about 2,000 feet (609^m6) southwest of Wallace Rock, and $1\frac{1}{2}$ miles, 205° from South Baymouth front leading light. 15

Entrance channel.—The entrance channel, on the line of the leading lights, has a least depth of 16 feet (4^m9), situated nearly 400 yards (365^m8) southward of the front leading light. The narrowest part of the channel is off McGaw Point, where the width between the 3-fathom (5^m5) line is 75 yards (68^m6). 20

Leading lights.—**Fog signal.**—Two *fixed green* leading lights are exhibited at South Baymouth. The front light is exhibited, at an elevation of 28 feet (8^m5), from a white, square tower on a small island close westward of South Baymouth; the rear light is exhibited, at an elevation of 46 feet (14^m0), from a similar tower, 025°, 782 feet (238^m4) from the front light. 25

The lights are not seen eastward of McGaw Point and westward of Birch Point. The lights in line lead through the narrows. 30

A fog whistle sounds *one* blast every 30 seconds at the front light.

Islands.—A group of small islands on the northwest side of the channel between the narrows and the village have shallow water extending from them for 50 yards (45^m7), with the exception of the southwest one, which is steep-to.

Buoy.—A black spar buoy marks the southeast edge of the above bank. 35

South Baymouth is the village on the west side of the entrance to South Bay. There is a post office in the village, which is a popular summer resort. Groceries and gasoline are available. A good road connects the village with Little Current.

Wharf.—The Government wharf is 201 feet (61^m3) long, with a depth of 13 to 15 feet (4^m0 to 4^m6) at the face and 12 feet (3^m7) along its sides. On the northeast side of the wharf are a number of submerged piles, the ruins of a former wharf. A ferry, carrying automobiles, operates in the summer months, making connections twice daily with Tobermory. 40

Basin.—A harbour for small craft lies between the easternmost small island and Manitoulin Island on the western side of the village. It consists of a mooring basin 300 feet (91^m4) by 100 feet (30^m5), with an entrance channel 250 feet (76^m2) long and 40 feet (12^m2) wide, with a depth of 5 feet (1^m5). There are four small Government wharves in the basin, each 50 feet (15^m2) in length, with a depth of 5 feet (1^m5) alongside. 50

Chart 2271.

Scotchie Reef, a low, dry reef, lies close to the shore about half a mile west southwestward of South Baymouth.

Inkster Rock, with 3 feet (0^m9) of water over it, is the outer end of a spit which extends southeastward from Scotchie Reef.

Buoy.—A black spar buoy is moored northeastward of Inkster Rock.

Chart 2298.

Benson Point on the southeast shore of South Bay, and 6¼ miles northeastward from McGaw Point, forms the northwest entrance point of Roberts Bay. It has a small spit 100 yards (91^m4) wide extending from it.

Roberts Bay is a rectangular indentation 2 miles long and over three-quarters of a mile wide. The shores are fairly clean, but a shallow sandbank extends half a mile from the head. The distance between the heads of Roberts and Thomas Bays is a little under a mile.

Indian Village makes a conspicuous mark on the southeast shore 11½ miles from South Baymouth. The houses are built along the beach for about a mile and are all whitewashed. A Roman Catholic Church with spire is the most conspicuous of the buildings.

Glycerine Rock.—The only real danger in South Bay is off this village. It is a pile of boulders, with about 3 feet (0^m9) of water over them, lying 298° distant three-quarters of a mile from the church. It has 12 fathoms (21^m9) of water close northwest of it, and 10 fathoms (18^m3) between it and the shore.

In the northwestern corner of South Bay are two open bights called **Charlton** and **Leask Bays**; on the west shore south of Leask Bay is **Leask Point**, 2½ miles southward from which is an islet called **Sims Island**, close to the shore of a slight indentation, **Sims Bay**. On the southwest shore, between The Narrows and South Baymouth, are **Leason**, **Froude**, and **McKim Bays**, small indentations.

Directions for entering South Bay.—When not less than 2 miles from the entrance, bring the South Baymouth leading lights in line, bearing 025°, and steer for them so, passing westward of the light-and-bell-buoy, a red spar buoy and the red conical buoy off McGaw Point, and southeast of one black spar buoy, until the southwest dry reef of the front leading light group is nearly on the port beam. A vessel having now passed the narrows, with least depths of 16 feet (4^m9), should haul sharply eastward, steering about 072°, passing south eastward of black spar buoy and, proceeding on in mid-channel, may anchor off South Baymouth wharf.

If proceeding seaward, a vessel should keep the South Baymouth Village shore on board, pass southeast of turning buoy, and bring the leading lights in line astern.

Caution.—Nearly always, except in heavy weather, there is a strong current running out of South Bay, and masters of vessels should watch very carefully as the turn of the channel is sharp and narrow. At night a stranger should not attempt it.

Birch Point (Lat. 45° 33' N., Long. 82° 03' W.) is an inconspicuous point, situated 1¼ miles westward from Scotchie Reef, the shore between taking the form of a slight bay fringed with shoal water for a distance of 300 yards (274^m3).

Chart 2298.

Red Dan Rock, with less than 6 feet (1^m8) on its shoalest spot, lies a little over a quarter of a mile southeast from the nearest part of Birch Point. It is surrounded by shoal water for a distance of 200 yards (182^m9).

Walker Point lies a little more than a mile westward from Birch Point, and between them are two unimportant points and three shallow bays, the whole fringed with shallow water for a width of a quarter to a third of a mile. Walker Point is broken up into one conspicuous small island and a great many dry rocks. A very shallow spit makes off southwest a third of a mile from Walker Point.

Volunteer Spit is the southerly termination, with 12 feet (3^m7) over it, of a reef extending southward three-quarters of a mile from the first small point east of Walker Point.

Michael Point, bearing 300°, distant 3 miles from Walker Point, is a long narrow point stretching almost from the head of Michael Bay in a general westerly direction 2½ miles, to the outer rock. The outer half-mile of the point is broken up into a rock island 18 feet (5^m5) high and thickly wooded and several dry rocks.

Between the island and the point is a narrow passage, though only 8 feet (2^m4) of water may be carried through it. From the outer dry rock, a narrow spit makes out westward three-quarters of a mile to a depth of 11 feet (3^m4). On this spit, no less water will be found until close to the dry rocks, but on the contrary, there are several deep passages through for those locally acquainted.

Between Walker and Michael Points is a bay filled with reefs and shoals.

Genesta Bank, with less than 6 feet (1^m8) of water over its shoalest part, is a large bank lying in the mouth of the bay, and midway between Michael and Walker Points. Inside Genesta Bank and the line joining it to Walker Point Spit, it is not advisable for a vessel to go.

Maiden Island, oblong in shape, and small, lies 098°, distant 1½ miles from Michael Point; and, excepting the southeast side, the island is beset with shoal water. A rock, awash, on the bank surrounding Maiden Island, lies a quarter of a mile southwest from the south point of the island.

Advance Reef is a very dangerous obstruction both to the navigation of Michael Bay, and to vessels moving up and down the shore. Its shoalest part is awash and bears 265°, distant 1½ miles, from Michael Point. This rocky reef is three-quarters of a mile in length from southwest to northeast with a depth of 14 feet (4^m3) on its southerly patch, and 8 feet (2^m4) on the northerly one. Between the east end of Advance Reef, and the spit from Michael Point, is a passage a quarter of a mile wide, but no leading mark offers.

Two detached spots, with 11 and 14 feet (3^m4 and 4^m3) over them lie, respectively, northwesterly half a mile, and southwesterly one-third of a mile from the spot awash. Between the end of Advance Reef and Buckeye Shoal is the passage into Michael Bay, 1¾ miles wide, while between it and Rathbun Point the entrance is nearly 1¼ miles wide. As no good marks offer for clearing Advance Reef, the master of a vessel must use caution while in its vicinity.

Michael Bay, inside the line joining Hammond Point (*see* page 42) to the outer dry rock off Michael Point, is 2¼ miles long east and west, with an almost uniform width of one mile. The south shore for three-quarters of a mile eastward of the mainland portion of Michael Point is clean and may be approached

Chart 2298.

to within 100 yards (91^m4). Hammond Point may be approached to within 200 yards (182^m9), for a distance of one-third of a mile southeast from the most southerly part of it, when the shoal bank widens out to a width of nearly
 5 a mile from the sand beach in the northeast corner of the bay, leaving a narrow lane of deep water between it and the shallow bank from the south shore. The shore at the head of Michael Bay, for nearly 1½ miles south of Manitou Creek (see page 41), is clean sand beach.

- 10 A rock, with 11 feet (3^m4) of water over it, lies three-quarters of a mile northeast from Michael Point (mainland) and a little over 200 yards (182^m9) from the nearest point on the south shore. This rock and Chisholm Shoal (see below) are the worst dangers in Michael Bay.

Blue Jay Creek is small and empties into the bay at a point three-quarters of a mile southeast from the wharf (see below).

- 15 **Manitou Creek** empties into the bay one-quarter of a mile northeast of the wharf. Close to its mouth is a waterfall of about 10 feet (3^m0).

There is a small village at the mouth of Manitou Creek.

A rock, with 12 feet (3^m7) of water over it, lies half a mile 213° from the wharf, with depths as great as 20 feet (6^m1) between them.

- 20 **Chisholm Shoal**, with 5 feet (1^m5) of water on it, is a dangerous rocky spot on the north shore bank, two-thirds of a mile from Hammond Point.

Clearing mark.—To pass southwest of Chisholm Shoal, keep Jenkins Point in sight southwest of Hammond Point, bearing 289°.

- 25 **Wharf.**—A small wharf at which 7 feet (2^m1) of water will be found, is situated on the north shore of Michael Bay 1½ miles from Hammond Point.

There is highway connection between Manitowaning village, situated at the south end of the bay of the same name, on the north side of Manitoulin Island, with South, Michael, and Providence Bays and telephone and telegraphic connection with mainland via Little Current.

- 30 **Anchorage.**—If the master of a vessel is desirous of loading off the mouth of Manitou Creek, 15 feet (4^m6) can be carried to within a half mile of it, by heading for the middle of the bay, keeping Jenkins Point a little open south of Hammond Point, bearing 289°, until the wharf bears 353°, when haul up for it. The anchor may be dropped, when the proper depth is reached. If a vessel
 35 desires only shelter, she can drop anchor anywhere off the south shore, taking care to avoid the 12-foot (3^m7) rock mentioned above. Probably the best all around anchorage is southeast of Chisholm Shoal, with Rathbun Point in sight southwest of Hammond Point, in 21 feet (6^m4) over clay, and the wharf bearing 016°. Anywhere outside the 3-fathom (5^m5) line, a vessel will find holding ground,
 40 sand over clay, but the shelter is not good from winds between southwest and northwest.

- Hammond Point** (Lat. 45° 36' N., Long. 82° 08' W.), 1½ miles westward from the wharf, is the north entrance point of Michael Bay. The point is broad and rounding, composed of small projections. It is comparatively clean,
 45 the shoal water lying off only 200 yards (182^m9).

Carter Bay is the gradually curving indentation, 1½ miles broad at the mouth, and half a mile deep, lying between Hammond and Rathbun Points. Its shore is mostly sandy and shows up very conspicuously. The sandy bottom is shallow for a width of a third of a mile.

Chart 2298.

A rock, with only 7 feet (2^m1) of water over it, and a very dangerous obstruction in the entrance to Carter Bay, lies half a mile westerly from the most southerly part of Hammond Point.

Rathbun Point is situated $1\frac{1}{4}$ miles northwest of Hammond Point. A spit 5 makes out from it in a southerly direction one-quarter of a mile, and a detached shoal, with only 12 feet (3^m7) of water on it, lies in the same direction, half a mile from the point.

Rathbun Bay is a shallow and foul indentation lying about midway between Rathbun and Jenkins Points. It runs in half a mile from the line of 10 the points.

A shoal, with 15 feet (4^m6) least water on it, lies off this bay, and nearly a mile southeast of Jenkins Point.

A shoal, with 18 feet (5^m5) least water over it, lies nearly a mile, 238° , from Rathbun Point, and another shoal spot, with 21 feet (6^m4) of water over it, 15 lies in about the same direction, $1\frac{1}{4}$ miles from the same point.

Jenkins Point, the next projection northwest of Rathbun Point, and $4\frac{1}{2}$ miles southeast of Providence Point, is like the rest of the shore, low and wooded. Shoal water extends from it a third of a mile in a southerly direction.

Buckeye Shoal, one of the worst dangers on the shore, is very small, with 20 less than 6 feet (1^m8) of water on it, and lies nearly a mile southward from Jenkins Point. Another small rock, with 13 feet (4^m0) of water on it, lies half a mile to westward of Buckeye Shoal.

A small patch, with 24 feet (7^m3) over rock, lies 201° , distant 2 miles, from Jenkins Point and 279° , distant nearly 4 miles, from Michael Point. 25

Hughson Bay, the head of which lies a mile northward from Jenkins Point, has nearly straight shores fringed with shallow water for a distance of a third of a mile.

From the head of Hughson Bay, its northern shore trends westward one mile and then northward three-quarters of a mile to the head of an indentation 30 called **Timber Bay**. the shore being low, stony, and covered with small spruce, tamarack, and birch. At a distance of 200 to 400 yards (182^m9 to 365^m8), from the east shore of Timber Bay, lie two islets, and westward of the northern islet are two dry rocks. Shoal water extends a quarter of a mile southwestward from the outer dry rock. Two rocks, with less than 6 feet (1^m8) of water on 35 them, lie over a third of a mile southward from the southern islet.

Timber Bay Shoal is a rock, 2 feet (0^m6) high, lying over three-quarters of a mile southwest from the southeast entrance point to Timber Bay. Shoal water extends from it southeastward 200 yards (182^m9), otherwise the rock is clean. 40

Anchorage may be had in Timber Bay, by bringing the outer and western dry rock to bear 173° , dropping the anchor when half-way between it and the northern shore.

Providence Point is a rather bluff point, about 20 feet (6^m1) high, situated 304° , $8\frac{1}{2}$ ($7\frac{1}{2}$ nautical) miles from Michael Point, the intervening shore being 45 fringed with shoal water for a distance of half a mile and forming the south-

Chart 2298.

east entrance point to the bay of the same name. A shallow spit makes out from it in a southeast direction one-quarter of a mile, where will be found a depth of 14 feet (4^m3). On the west side of the point, shoal water reaches out 5 350 yards (323^m6), whereas a little farther north the bank is only 200 yards (182^m9) wide.

Light.—Fog signal.—On the west extreme of Providence Point is erected a white octagonal wooded tower, that from a height of 43 feet (13^m1), exhibits a *fixed white* light, visible 13 (11 nautical) miles.

10 A hand fog-horn replies to vessels' signals.

Everett Reefs are a group of dry rocks, lying one-third of a mile from the shore, midway between Timber Bay and Providence Point. Shoal water extends a quarter of a mile southwest from them.

Providence Bay is the first indentation of any importance east of Duck 15 Islands, the lighthouse being distant 31 (27 nautical) miles eastward from Outer Duck Island. The bay is open to southerly winds and sea, but a vessel with good ground tackle could ride out a moderate gale, by first anchoring under the southeast shore, and when the wind changes to southwest, moving to a berth under Simcoe Point. The bottom is sand over clay.

20 From Providence Point, the shore of the bay trends northeastward one mile and northwestward the same distance, forming the head consisting of a sand beach. The two-thirds of a mile of shore northeast from Simcoe Point is lined with large boulders. The shallow bank from the southeast side has a width of 200 to 400 yards (182^m9 to 365^m8); from the beach and the northwest sides the 25 bank is one-third of a mile wide. The anchorage water has a depth of 2 to 4 fathoms (3^m7 to 7^m3).

Mindemoya River flows into Providence Bay near the village, its source being in Mindemoya Lake, 3½ miles inland.

Wharves.—A Government wharf 500 feet (152^m4) in length is located 30 about half a mile northeast of Providence Point. About 400 feet (121^m9) shoreward from the outer end of the wharf, and extending northward from its eastern side, is a fish pier 196 feet (59^m7) in length with a depth of 6 feet (1^m8) alongside. An approach channel 540 feet (164^m6) long and 150 feet (45^m7) wide with a depth, in 1954, of 11 feet (2^m7), leads from the lake to this wharf. 35 On the eastern or protected side of the wharf, a turning basin 285 feet (86^m9) long and 192 feet (58^m5) wide has the same depth. Another small wharf is situated near the village, about the middle of the sand beach, and at the mouth of a small stream, but has only 6 feet (1^m8) of water at its outer end.

Buoys.—A red spar is moored at the southwest corner of the outside end 40 of the dredged channel leading to the Government wharf, and a black spar buoy at the northeast corner of this channel, opposite the outer end of the wharf, where it joins the east side of the turning basin.

Light.—On the outer end of the Government wharf, on the east shore of the bay, a *fixed red* light is shown, at an elevation of 23 feet (7^m0), from a lantern 45 on a pole.

Chart 2298,

Providence Bay village is situated near the middle of the sand beach. It is the centre of a large farming and ranching district. The village is connected by telephone with the other villages on Manitoulin Island, and with the telegraph system at Little Current. Only very limited supplies can be obtained. There is a weekly or bi-weekly passenger and package freight service from Owen Sound.

5

Simcoe Point (Lat. $45^{\circ} 40' N.$, Long. $82^{\circ} 17' W.$) is the northwest entrance point to Providence Bay, and has deep water within 400 yards (365^m8).

Simcoe Bank is a dangerous obstruction in the entrance to Providence Bay. It has a least depth of 12 feet (3^m7) on its outer end, and bears 206° , distant three-quarters of a mile, from the east end of Simcoe Point. From this position, the southeast edge of the shoal water trends northeasterly $1\frac{1}{4}$ miles, joining the shoal water at the head of the bay.

Light-and-bell-buoy.—Off the south edge of Simcoe Shoal is moored a light-and-bell-buoy, showing a *flashing white* light.

From Simcoe Point, the nearly straight shore trends northwesterly $1\frac{1}{2}$ miles to **Mutchmore Point**, the shore between being lined with boulders and shallow water for a distance of one-third of a mile. A shoal, with 18 feet (5^m5) of water on it, lying one-quarter of a mile outside the 3-fathom (5^m5) line, bears 162° , 20 distant two-thirds of a mile from Mutchmore Point.

Dean Bay, of which Mutchmore Point is the southeast entrance point, is a shallow bay, with shallow water extending from it three-quarters of a mile.

Dean Spit, with 12 feet (3^m7) near its outer end, extends half a mile southwest from the point between Dean and Lonely Bays. One and a half miles, 211° off the same point, is a depth of 25 feet (7^m6).

Milton Point is a stony projection situated $2\frac{1}{4}$ miles northwest from Mutchmore Point.

Lonely Bay is a small shallow bay, one mile eastward of Milton Point, the shore between being nearly straight and fringed with a shallow bank 300 yards (274^m3) wide. A small stream empties into this bay through a sand beach.

30

Milton Reef runs out from Milton Point three-quarters of a mile in a southwest direction, to a depth of 15 feet (4^m6), but, in the same direction, half a mile from the point, is a spot with only 6 feet (1^m8) over it. Also, in the same direction, $1\frac{2}{3}$ miles from the point is a depth of 27 feet (8^m2), with another one of 25 feet (7^m6) a quarter of a mile northward of it.

35

Lougheed Bay is the shallow bay a little over a third of a mile long between Milton and Lougheed Points.

Lougheed Point is the rounding southeast entrance point of Square Bay, and separates it from Lougheed Bay; a spit, with a depth of 12 feet (3^m7), makes out nearly half a mile from the east side of the point, in a southerly direction.

40

Lougheed Reef is a long narrow twisted spit, with two heads, lying in a general southwest and northeast direction; the two heads, with 13 and 18 feet (4^m0 and 5^m5) over them, lie, respectively, one-half mile and two-thirds of a mile from Lougheed Point.

45

Chart 2298.

Square Bay is situated immediately northwest of Loughed Point, and is half a mile long, the shallow water extending nearly to the line of the containing points. Good holding ground may be had, in patches between the boulders in the mouth of the bay, by approaching from the southwest to avoid Loughed Reef. A spit makes out in a southwesterly direction two-thirds of a mile, from the west entrance point of the bay, to a depth of 13 feet (4^m0).

Dominion Point is situated 2½ miles westward from Loughed Point. Two outlying shallow spots, with 18 and 15 feet (5^m5 and 4^m6) over them, lie over three-quarters of a mile 229°, and 1¼ miles 243°, respectively, from the east extreme of Dominion Point; 1½ miles south-southwestward is a depth of 27 feet (8^m2).

Between Mutchmore Point and Dominion Point and also for about one mile westward of the latter, the soundings are more or less irregular inside of the 10-fathom (18^m3) line.

Dominion Bay, protected on the west by the point of the same name, is a mile wide across the mouth, and half a mile long. There is good holding ground, in patches in the mouth of the bay, and shelter from westerly winds by anchoring about 300 yards (274^m3) from the east side of Dominion Point, where the shallow bank is only about 150 yards (137^m2) wide. The bank, from the head of the bay, is a third of a mile wide, and from the southeast entrance point a spit extends southwestward, half a mile, to a depth of 12 feet (3^m7). Three-quarters of a mile, 187°, from the same point is a depth of 19 feet (5^m8).

From Dominion Point, the low limestone shore trends straight northwest 3 miles to **Melville Point**, and is fringed with shoal water for an average distance of over a third of a mile. Melville Point, slightly rounding, is rather higher than the rest of the shore and composed of larger broken stones.

Srigley Bay is a roadstead marked by a small stream, that empties itself through a sandbank about 1¼ miles north of Melville Point. Fairly good shelter may be had from southeast winds, about a third of a mile off the mouth of the stream, the holding ground of the anchorage being sand clay.

The northwest entrance point of Srigley Bay, distant 1¼ miles northwestward from Melville Point, has deep water reaching to within 150 yards (137^m2) of it.

Portage Point (Lat. 45° 45' N., Long. 82° 33' W.) is situated 4 miles northwest from Melville Point, the shore between being indented by Srigley Bay, already mentioned, and Portage Bay. From Portage Point, shoal water extends 400 yards (365^m8).

Portage Bay affords neither shelter nor holding ground, and the shores are very foul for a distance of a third of a mile. The portage across to Lake Wolsey on the north coast of Manitoulin Island is here, only 2 miles.

The southeast point of Portage Bay is nearly midway between Melville and Portage Points. Abreast of it, the shallow shore bank is only 300 yards (274^m3) wide and continues with about the same width to Srigley Bay (*see above*).

Thistle Reef is a long narrow danger extending southward from the middle of Portage Bay. Its south end, with 11 feet (3^m4) near it, lies 2 miles southeastward from Portage Point. The reef is 1½ miles in length, and the shoalest spot, with depth of less than 6 feet (1^m8), is on the northern end, distant nearly 1¼ miles southeast from Portage Point.

The west edge of this reef, bearing 166°, is distant 1¼ miles from Portage Point. A detached 11-foot (3^m4) spot bears 139° distant 1½ miles from the same point.

Chart 2298.

From Portage Point, the shore trends westerly 4 miles to **Gatacre Point**. The eastern half is fairly straight, and fringed with outlying boulders, and very shallow water to an extent of one-third to half a mile. The shallow bank from the western portion has an average width of 300 yards (274^m3). From Gatacre Point itself, a shallow bank extends in places a third of a mile. 5

Shamrock Bank has less than 6 feet (1^m8) of water on it and bears 110°, distant 1 $\frac{3}{4}$ miles, from Gatacre Point, and two-thirds of a mile from the nearest land. The bank extends southwestward a quarter of a mile outside this shoalest spot. 10

Murphy Point is a narrow peninsula separating Murphy Harbour from Fréchette Bay. Shoal water lies off the point half a mile.

Murphy Harbour is a shallow boat harbour running in half a mile from the eastern extreme of Murphy Point. From Gatacre Point, the shore trends 2 $\frac{1}{4}$ miles northwestward to the southeast entrance point of the harbour, distant two-thirds of a mile southeasterly from Murphy Point. A small islet lies in the middle of the mouth, and shelters the harbour. The deepest water, 7 feet (2^m1) in the entrance, is about midway between the islet and the southeast entrance point; only about 10 feet (3^m0) can be had inside. The north shore of the harbour is shallow for a space of 300 yards (274^m3). The best anchorage is between the islet and the northwest corner of the bay and about 300 yards (274^m3) therefrom. 15 20

Fréchette Bay is very shallow, 1 $\frac{1}{4}$ miles long, and from 200 to 600 yards (182^m9 to 548^m6) wide, running in just eastward of the point of that name. The whole shore is very low and shelving and has shallow water off it for half a mile. 25

Fréchette Point lies 3 $\frac{1}{3}$ miles northwestward from Gatacre Point and is fronted by shallow and foul water.

Fréchette Bank, with less than 6 feet (1^m8) of water on it, is the name given to the outer end of the reef, which extends a mile southward from Fréchette Point. Two shallow spots, with 15 to 17 feet (4^m6 to 5^m2) of water over them, lie nearly half a mile south, and southwest, respectively, from Fréchette Bank. 30

Taylor Reef is a long narrow disjointed reef lying in the approach to Misery Bay (*see below*). Its south end, with 16 feet (4^m9) of water on it, lies 1 $\frac{3}{4}$ miles southward from the west entrance point of Misery Bay. From this south end, the reef trends nearly straight to the shore bank extending across the entrance to the bay. The shoalest spot on the reef has 13 feet (4^m0) over it, and lies one mile from the west entrance point. In entering the bay, strangers should pass eastward of Taylor Reef, but those well acquainted cross the reef in several places. 35 40

Saunders Reef is a very shallow circular bank a quarter of a mile in diameter, the shoalest spot having less than 6 feet (1^m8) of water over it, and bearing 137° distant one mile, from the west entrance point to Misery Bay, and midway between Taylor Reef and the shore southeast of the entrance. The channel of approach to the bay leads between these two reefs. 45

Misery Point, nearly 3 miles westward from Fréchette Point and bearing 240°, distant three-quarters of a mile, from the west entrance point of Misery Bay, has shoal water extending from it in a southerly direction one-third of a mile, and southeastward 300 yards (274^m3). Thence, to the bank across the entrance to Misery Bay the shallow bank is a third of a mile wide. 50

Chart 2298.

From Fréchette Point, the gradually rounding shore trends in a general northwest direction, 2 miles to the entrance of **Misery Bay**. The whole shore is very low and shelving and the southeast portion has shallow water extending
5 from it half a mile. The bay is $1\frac{1}{4}$ miles long, and has a nearly uniform width of one-third of a mile. The bay is suitable for only a couple of small vessels, as only 13 feet (4^m0) of water can be had, and that at half a mile inside the entrance. The width of the harbour will not allow of a vessel swinging with a long scope of cable. The 3-fathom (5^m5) line is distant one-third of a mile from
10 the entrance of the bay. To enter, open the bay, when not less than $2\frac{1}{2}$ miles distant, and proceed in with the middle of the entrance, bearing 338°. After shutting in Misery Point, anchor in the middle, in 13 feet (4^m0) over sand and mud.

Methuen Reef is the very shallow rocky end of a flat trending three-
15 quarters of a mile southwestward from Misery Point. It has less than 6 feet (1^m8) of water over it.

Clearing mark.—Murphy Point just in sight south of Fréchette Point, bearing 079°, leads southward of Methuen Reef and to the entrance of Misery Bay, with not less than 17 feet (5^m2).

Goose Point is situated $3\frac{1}{4}$ miles northwestward from Misery Point, and,
20 like nearly all the south coast of Manitoulin Island, is low, rocky, and lined with boulders. Shallow water makes off from it half a mile southwestward and two-thirds of a mile southeastward.

From Misery Point, the shore which may be approached to 300 yards
25 (274^m3), except in the vicinity of Methuen Reef, trends northwest $2\frac{1}{2}$ miles to the head of **Hensley Bay**, which consists of a sand beach a third of a mile long with a flat extending from it nearly that distance.

Buller Reef is a small cluster of dry stones lying a quarter of a mile south-
30 east from the broken up west entrance point at Hensley Bay. Deep water approaches to within 200 yards (182^m8) of the east side, but a spit makes out two-thirds of a mile in a southerly direction from the reef, to a depth of 15 feet (4^m6). A couple of detached spots, with 17 and 18 feet (5^m2 to 5^m5) over them, lie on the same bearing, distant, respectively, a little under, and a little over one mile from the reef.

In addition to these shoals, the whole shore between Hensley Bay and Goose
35 Point has a shallow bank extending from it two-thirds of a mile.

Walkhouse Point, a very dark-tinted, low narrow point, is situated $2\frac{1}{2}$
miles westward from Goose Point, and has shoal water extending off it 400 yards (365^m8). It forms the west entrance point to the bay next described.

Carroll Wood Bay (*Lat. 45° 48' N., Long. 82° 50' W.*) is a very large
40 triangular-shaped indentation, and, from the line joining Walkhouse and Goose Points, is $1\frac{3}{4}$ miles deep. The east shore is shallow for about 300 yards (274^m3); the head cannot be approached nearer than $1\frac{1}{4}$ miles, and the middle part of its western shore has a shallow bank extending from it half a mile. The deep water,
45 from 5 to 6 fathoms (9^m1 to 11^m0) is spoiled by the three banks next mentioned.

Morrell Reef, with only 6 feet (1^m8) of water near its middle, is a narrow
shoal two-thirds of a mile long north and south, and its shoalest spot is situated two-thirds of a mile westward from Goose Point. Between it and Seaman Reef is
50 a lane, 5 to 6 fathoms (9^m1 to 11^m0) deep, and half a mile wide, while the passage between its south end and the bank from Goose Point is almost blocked by a shoal, with only 12 feet (3^m7) of water over it.

Chart 2298.

Seaman Reef lies with its shoalest spot of 11 feet (3^m4), in the middle, $1\frac{1}{2}$ miles northeastward from Walkhouse Point. It is narrow, and a third of a mile long north and south.

Gaspesia Shoal is a narrow strip with 16 feet (4^m9) of water upon it, one-third of a mile long north and south, situated half a mile eastward from the same point. Three-quarters of a mile southeastward of Walkhouse Point are several detached depths of 21 feet (6^m4) and one southward with 23 feet (7^m0) over it. 5

Queen Point, the next northwestward from Walkhouse Point, and distant a third of a mile therefrom, has shoal water extending from it a quarter of a mile on all sides, except the southwest point, where it extends 200 yards (182^m9). 10

Walkhouse Bay is a shallow indentation lying between Walkhouse and Queen Points. It has a depth of only 8 feet (2^m4) at its entrance, with 10 to 19 feet (3^m0 to 5^m8) inside over a limited area.

Fisher Bay is a very shallow bight on the northwest side of Queen Point, the entrance being half a mile, and the head nearly a mile northward of this point. 15

Rudyard Reef is a small dry spot, over half a mile westward from Queen Point, and a quarter of a mile from the shore. From it, shoal water extends half a mile in a southerly direction. 20

Green Point, so called by reason of the light clour of the birches growing on the point, in contrast with the dark spruce and pines, is situated westward $1\frac{1}{2}$ miles from Queen Point, and there is no navigation inside the line of the points. Green Point is almost joined to Inner Duck Island, distant 2 miles southward, by a shallow sand and boulder bar; but good water approaches the south side of Green Point to within a quarter of a mile. 25

Thibault Shoal is the shoalest spot on this bar, and has over it less than 6 feet (1^m8). It is a third of a mile long north and south, very narrow and is situated nearly midway between the point and island. The bar may be crossed between Thibault Shoal and Green Point in 16 feet (4^m9), by bringing Girouard Point (*see* page 54) in line with the south end of Burnt Island, bearing 300° . 30

Chart 2297.

Duck Islands, usually called the Ducks, are a group of five islands lying southeastward 51 (44 nautical) miles from Point Detour lighthouse, also from 2 to 12 miles south of Manitoulin Island, and distant 13 to 22 miles from its west end. Excepting Great Duck Island, none are high, but for the trees which grow thickly on them. 35

Inner Duck Island has the shape of an irregular quadrilateral, being nearly a mile long north and south by half a mile in greatest width. It is composed of large boulders, is about 10 feet (3^m0) high, and thickly wooded with small timber. The north end is, however, a gravel bank, upon which are a few fishermen's huts. Shoal water makes out half a mile from the south point, but the west side may be approached to 200 yards (182^m9), and the east side to a quarter of a mile. Landing on the east side is very bad. 40

Macaulay Spit is the southern termination of a shallow spur that makes out in a southerly direction over three-quarters of a mile from the most easterly point of the island. 45

Chart 2297.

Middle Duck Island, the smallest of the group, lies 3 miles southward of Inner Duck Island. It has a length, north and south, of over three-quarters of a mile, and a maximum width of a quarter of a mile near its middle.

- 5 A spit, with 7 feet (2^m1) at its outer end, extends two-thirds of a mile northward from the north end of Middle Duck Island. The east side may be approached to within 200 yards (182^m9). The southeast point has a spit, with 8 feet (2^m4) near its outer end, extending from it southeastward a quarter of a mile. The south side and the northern half of the west side should receive a
10 berth of a quarter of a mile.

Kipling Reef is a very shallow bank, with less than 6 feet (1^m8) of water, lying half a mile westward from the southern portion of Middle Duck Island, and between them is no passage. From this reef shallow water extends still farther northwest, nearly a third of a mile to a depth of 15 feet (4^m6).

- 15 **Clearing mark.**—To pass west of this reef, keep the gap between Great and Outer Duck Islands closed, bearing 164° . Not more than 6 fathoms (11^m0) can be carried between Middle Duck and the two islands south of it.

- Great Duck Island**, as its name implies, is the largest of the group, and with its height, 185 feet (56^m4) and heavy timber, makes a conspicuous object
20 for a long distance. It is $4\frac{1}{4}$ miles long, in a north and south direction, with a maximum width of $2\frac{1}{4}$ miles near its middle. The coast line is low and fringed with boulders, making landing anything but comfortable, whereas inland, there is some fine farming land and heavy hardwood timber.

- Light.—Fog signal.**—On the southwest point of the island is erected a
25 white octagonal reinforced-concrete tower, surmounted by a red polygonal lantern, which from a height of 89 feet (27^m1) exhibits a *flashing white* light, showing *three flashes every fifteen seconds*. The light is visible 17 (15 nautical) miles.

- The white fog signal building, with brown roof, is situated close southward
30 of the lighthouse. A diaphone sounds blasts of *two and one-half seconds'* duration, every *30 seconds*.

- Horseshoe Bay** is a shallow, nearly circular bay, half a mile in diameter on the west side of Great Duck Island, 2 miles northward from the lighthouse. Only 7 feet (2^m1) can be carried in, and, as the bottom is strewn with large
35 boulders, it is not recommended for anything but boats.

The coast between the lighthouse and the northwest point, distant $3\frac{1}{2}$ miles, is clean and may be approached to 200 yards (182^m9) at the north end, and 100 yards (91^m4) near the lighthouse.

- Manitoba Reef**, 3 feet (0^m9) high and small, lies two-thirds of a mile
40 northeast from the northwest point of Great Duck Island. It has deep water close to its north side, but there is no passage between it and the island. Shoal water extends west from it one-third of a mile.

- Desert Point** (Lat. $45^\circ 41' N.$, Long. $82^\circ 56' W.$), the northeast extreme of Great Duck Island, is rendered conspicuous by its bare sand hills, and lies $1\frac{1}{4}$
45 miles southward from the southwest point of Middle Duck Island. Very shoal water fringes Desert Point for a distance of 200 yards (182^m9) and the 3-fathom (5^m5) line rounds the point at the distance of a quarter of a mile.

- From Desert Point, the north coast runs nearly straight westward, about $1\frac{3}{4}$ miles to the northwest point of the island, and has very shoal water extending
50 from it 200 to 300 yards (182^m9 to 274^m3).

Chart 2297.

From the lighthouse, the coast runs southeast, $1\frac{1}{4}$ miles nearly straight to the south point of the island. It is fringed with boulders and indented by several small coves, one of which near the lighthouse affords a fair landing. From the middle of this coast shoal water extends half a mile.

A spit, with 17 feet (5^m2) of water at its south end, runs out southwestward nearly three-quarters of a mile from the south point. Shallow water extends south a third, and east a quarter of a mile from the same point.

Mary Shoal, small with a depth of 9 feet (2^m7) at its south end, lies a little over half a mile southwestward from the south point of Great Duck Island. The shoal is elliptical in shape, a quarter of a mile long northeast and southwest and 250 yards (228^m5) wide.

Kitty Shoal, with 11 feet (3^m4) least water near its middle, is half a mile long, northeast and southwest, and 200 yards (182^m9) wide. The middle of the shoal bears 193° , and is distant one mile from the south point of Great Duck Island.

Clearing mark.—Walkhouse Point on Manitoulin Island in line with the wharf on the northwest extreme of Outer Duck Island (*see* page 52), bearing 018° , leads east of Kitty, and west of Mary Shoal.

Larry Rock, with 14 feet (4^m3) of water on it lies close westward from Kitty Shoal.

A small rock, with 19 feet (5^m8) least water on it, lies $1\frac{1}{2}$ miles south from the lighthouse.

Clearing mark.—To pass west of the above shoals, at least one-third of Western Duck Island must be visible west of Great Duck Island.

Jennie Graham Shoal is the most southerly, and therefore the most dangerous of the reefs lying south of Duck Islands. There are several boulders on the shoal with only 7 feet (2^m1) of water over them; the most southerly is distant 1.8 miles from the south point of Great Duck Island and nearly $2\frac{3}{4}$ miles 157° from the lighthouse.

Clearing marks.—To pass east of this shoal keep the west side of Middle Duck Island open east of or touching the east side (Gravel Point) of Great Duck Island, bearing 004° .

To pass west, keep Walkhouse Point touching the northwest point (wharf) of Outer Duck Island, bearing 018° . This mark will lead a vessel close up to the wharf with not less than 15 feet (4^m6) water.

Ascertaining distance.—If the master of a vessel has a sextant he can ascertain his distance south of the islands and the shoals as follows: If from the southeast on the course from Cove Island lighthouse; as Middle Duck Island is disappearing behind Outer Duck Island, measure the angle subtended by Great and Outer Duck Islands together. If it be greater than 28° the vessel will pass less than a mile from Jennie Graham Shoal, if less than 28° the vessel will pass farther out.

If from the northwest, on the course from Detour Passage; as the gap between Great and Western Duck Islands is closing, measure the angle subtended by Great and Outer Ducks. If it is found to be greater than 57° , a vessel will be rather close in.

Note.—The direct line from Detour Passage to Cove Island passes through Great Duck Island, so that a vessel will not save much by passing between Great and Middle Duck Islands, but would sacrifice the safer track south of the group.

Chart 2297.

Gravel Point, on the east side of Great Duck Island, is situated $1\frac{1}{2}$ miles northward from the south point of the island, the coast between being nearly straight, the southern half lined with boulders, and the northern half forming a slight bay with good landing for boats.

Wharf.—In the above mentioned bay is a small fishing establishment with a pile wharf, at which 12 feet (3^m7) of water will be found.

The slightly rounding point three-quarters of a mile south of Gravel Point, is connected to Outer Duck Island by a sand bar over which not more than 15 feet (4^m6) can be carried. The bar is a quarter of a mile wide, and may be crossed by steering 018°, with Walkhouse Point in line with the wharf on Outer Duck Island (*see below*).

Anchorage, in 7 to 10 fathoms (12^m8 to 18^m3), may be had just north of the bar, with the whole of Middle Duck Island in sight west of the wharf on Outer Duck Island, and about a quarter of a mile south from the latter; or a vessel may pass north of the narrows and anchor on the flat extending from the east shore of Great Duck Island, but the former anchorage gives the better shelter.

Bain Rock is a dangerous rock just covered, lying on the sand bar above alluded to. It lies a quarter of a mile from the middle of the west side of Outer Duck Island, and bears 184°, distant nearly a mile, from the Outer Duck Island wharf.

From Gravel Point, the east coast of Great Duck Island trends northward 2 miles nearly straight, to Desert Point (*see* page 50). The shore is fringed with boulders except for a small piece of beach near Gravel Point, and shallow water fronts it for an average distance of one-third of a mile.

Outer Duck Island, is the southeasternmost of the group. It is 23 feet (7^m0) high near its north end, which is cleared and covered with the huts of fishermen who do an extensive business here.

The island is situated eastward and abreast of the southern half of Great Duck Island. It is 2 miles long north and south, and under half a mile in greatest width at the middle. The wharf, near the northwest point of the island, is almost abreast and a third of a mile from Gravel Point, the nearest part of Great Duck Island. The navigable channel opposite the wharf, though only 200 yards (182^m9) wide, is deep.

A spit makes out northward a third of a mile from the north point of Outer Duck Island, to a depth of 15 feet (4^m6).

The whole of the east coast of Outer Duck Island is fringed by large boulders just covered, for a width of 200 yards (182^m9), and shallow water for another 200 yards (182^m9).

A narrow spit extends over a mile southward from the south point of Outer Duck Island to a depth of 14 feet (4^m3), with very shallow water on the northern half. There is a channel of deep water three-quarters of a mile wide between this spit and the shoals south of Great Duck Island, and it may be navigated to within one mile of the wharf on Outer Duck Island, by bringing any part of Middle Duck Island in line with the same wharf. But, to pass over the bar, as before mentioned, the vessel must bring Walkhouse Point touching the wharf bearing 018°. Except opposite Bain Rock, the west coast of Outer Duck Island may be approached to 200 yards (182^m9).

Chart 2297.

Anchorage.—Eastward from Great Duck Island, between Outer and Middle Duck Islands, is a flat $1\frac{3}{4}$ miles long north and south by two-thirds of a mile in width, with very even depths between 3 and 10 fathoms (5^m5 and 18^m3), over sand and clay. On this flat, vessels will find good holding ground and some shelter from westerly and northwesterly winds, but a heavy swell rolls in. 5

Western Duck Island (*Lat.* $45^\circ 45' N.$, *Long.* $83^\circ 00' W.$) is the largest but one, and the westernmost of the group. It has the shape of an irregular quadrilateral, is about 25 feet (7^m6) high, covered with trees and fringed with boulders, except at its northeast point which is a sand flat. 10

The point is 3 miles in a southwesterly direction from the south end of Burnt Island, and $2\frac{1}{2}$ miles westward from Inner Duck Island. From this same point, it has a maximum length of nearly 2 miles in a southwest direction, and width of $1\frac{1}{2}$ miles.

From this northeast sandy point, shallow water makes out in all directions half a mile, and the north coast of the island trending westward over one mile is fronted by very shallow water for an average width of one-third of a mile. The coast then gradually sweeps round for nearly $1\frac{3}{4}$ miles to the southwest point, being fringed with shoal water for a width of a quarter of a mile. 15

From the northeast point of the island the east coast trends southward $1\frac{3}{4}$ miles to **Blake Point**, and is fringed with outlying boulders and shoal water for an average distance of a third of a mile. Blake Point itself is a mass of boulders, off which shoal water extends southward nearly half a mile. The point has deeply indented bays upon each side of it, but too foul to be useful. 20

From Blake Point the south side trends westward nearly a mile to the southwest point of Western Duck Island, and has a shallow bank extending from it a quarter of a mile. 25

Shoals.—A small rock, with 18 feet (5^m5) least water on it, lies three-quarters of a mile northward from the northeast point of Western Duck Island. Two rocks, with 11 and 12 feet (3^m4 and 3^m7) on them, lie one mile, 330° , and 319° , respectively, from the same point. A small rock, with 17 feet (5^m2) least water on it, lies northeastward over one-third of a mile from the northwest point of the island. 30

A bank, with 12 feet (3^m7) least water upon its western and shoaler end, is situated with this end over a third of a mile northwest from this same point. Thence the bank trends a third of a mile northeasterly, to a depth of 15 feet (4^m6), and is 200 yards (182^m9) wide, leaving a channel the same width between it and the bank from the island. 35

Western Duck Reef, a reef of boulders, is two-thirds of a mile long in an easterly and westerly direction, and one-third of a mile wide near its west end. The shoalest spot of 7 feet (2^m1) is very near the middle, and lies $1\frac{1}{2}$ miles northwest from the northwest point of Western Duck Island. There is a depth of 13 feet (4^m0) at the east end of Western Duck Reef. 40

A detached spot, with 16 feet (4^m9) least water upon it, lies 300 yards (274^m3) eastward of the east end of the reef. 45

Clearing marks.—To pass south of Western Duck Reef and its attendant shoals, keep the south end of Inner Duck Island shut in behind the northeast point of Western Duck Island, bearing 104° , and to pass west of them keep the highest part of the trees on the northwest point of Great Duck Island open of the southwest side of Western Duck Island, bearing 156° . 50

Chart 2297.

Stafford Rock is a small, nearly circular shoal with 7 feet (2^m1) least water upon it, lying 1 $\frac{1}{4}$ miles southwesterly from the south end of Burnt Island. Nearly in the same direction from Burnt Island, but distant 1 $\frac{2}{3}$ miles therefrom, is another small bank, with 19 feet (5^m8) least water on it.

Clearing marks.—The west side of Great Duck Island touching the north-east point of Western Duck Island, bearing 180°, will lead west of Stafford Rock, but east of the 19-foot (5^m8) rock. Ivan Point in line with the south end of Burnt Island, bearing 088°, will lead north of both.

Coast.—**Ivan Point** is a narrow point situated nearly a mile northwest from Green Point, the bay between being over a third of a mile long between the line of the points and very foul. It is steep-to on its west side, but shallow water makes out from the point southwest 300 yards (274^m3). The southern half of the bay between Ivan and Edna Points is clean and deep, but the northern half is very foul.

Edna Point forms the east shore of Christian Bay, and has shoal water extending 300 yards (274^m3) south from it.

Christian Bay is a shallow bay on the east side of Burnt Island, and almost joined to Burnt Island Harbour.

Burnt Island is situated with its south end 1 $\frac{3}{4}$ miles westward from Green Point, and is steep-to on its southeast, south, west, and north sides. The island is really a peninsula. It has the shape of an irregular quadrilateral, with a low limestone cliff on its west and north sides, and is 1 $\frac{1}{2}$ miles long in a northeast direction, by three-quarters of a mile in greatest width. It is chiefly important on account of the small fishing establishment and wharf on its north side.

Burnt Island Harbour is a large bay north of the island, in which will be found excellent anchorage, in from 3 to 6 fathoms (5^m5 to 11^m0) over mud, sheltered from all winds. The entrance is clean, two-thirds of a mile wide in a northwest direction from the northwest point of the island, and from this line the bay is over three-quarters of a mile long, and 1 $\frac{1}{2}$ miles wide at the head. The northwest corner cannot be approached within half a mile, nor the north-east within 300 yards (274^m3); the south shore is clean.

Off the most southerly part of the gradually rounding point separating Burnt Island and Rickley Harbours, a very shallow reef extends south a quarter of a mile, and must be carefully guarded against in approaching and leaving Burnt Island Harbour.

Rickley Harbour is a foul bay fit only for boats, a mile westward from Burnt Island Harbour. Across the mouth, it is half a mile wide by one-third of a mile long.

Girouard Point is a low bluff sharp point, projecting westward, with good water off its end and south side, and situated 1 $\frac{1}{4}$ miles northwest from the west entrance point of Rickley Harbour. Off the middle of this stretch, a very shallow spit runs out a third of a mile.

Ainslie Shoal, with less than 6 feet (1^m8) of water over rock upon its north end, has this spot lying over a third of a mile southward from Girouard Point. The bank is elliptical in shape, a little over one-third of a mile long north and south and a quarter of a mile wide, and has only 15 feet (4^m6) of water near the south end.

Chart 2297.

Clearing mark.—To pass south of this shoal keep Green Point in sight south of Burnt Island, bearing 107° . This bearing will, however, lead over a small patch, with 19 feet (5^m8) least water on it, bearing 235° , distant one mile, from Girouard Point.

5

Belanger Point (*Lat. $45^{\circ} 50'$ N., Long. $83^{\circ} 03'$ W.*) lies 2 miles westward from Girouard Point, and between them the water is deep. A shallow bay, three-quarters of a mile wide in the mouth, runs in $1\frac{1}{4}$ miles northeast of Girouard Point. Belanger Point has shoal water extending from its south end a quarter of a mile, while on its east side, the deep water comes close in.

10

Belanger Bay is an indentation running in just east of Belanger Point, nearly a mile wide across the mouth, and two-thirds of a mile long to the northwest corner. In it, the water is good to within 300 yards (274^m3) of the shores.

Labrador Reef is the southern termination of a bank extending a little more than half a mile southward from Dunn Island to a depth of 11 feet (3^m4), with 8 feet (2^m4) 300 yards (274^m3) north from it. The reef also extends a third of a mile northwestward from this 11-foot (3^m4) spot, to a depth of 16 feet (4^m9).

15

Jones Shoal, with 9 feet (2^m7) least water on it, is pear-shaped with the stalk at the northeast end. The shoalest part is near the middle and lies one mile southward from Dunn Island. From this spot the shoal extends west, a quarter of a mile to 18 feet (5^m5), and northward a little more than that distance to the same depth.

20

Clearing marks.—To lead southwest of Jones Shoal, keep the northeast point of Steevens Island touching the east end of Greene Island (trees), bearing 317° .

25

To lead south of the reef, bring the north bluff of trees on Green Point in line with the south end of Burnt Island, bearing 097° .

Dunn Island, about 5 feet (1^m5) high, a quarter of a mile long north and south and about 200 yards (182^m9) in greatest width, is crescent-shaped with a bay on its west side, and is situated two-thirds of a mile westward from Belanger Point, the bight between them being foul and fringed with shoal water for a quarter of a mile outside the line of the points.

30

Pearson Island, about 5 feet (1^m5) high, but covered with small trees, is a small island lying close northward of Dunn Island.

Quarry Point is situated one and one quarter miles northwest of Belanger Point, the shallow bay east of it running in a little more than one-third of a mile. Quarry Point is also the southeast entrance point of Greene Island Harbour. The point has shoal water extending from it a quarter of a mile southwestward, and half a mile westward.

35

Greene Island is large and conspicuous, lying as it does from one mile to $1\frac{3}{4}$ miles off the coast of Manitoulin Island. Its most westerly point is $2\frac{1}{2}$ miles southeastward from Lynn Point (*see* page 56), and from this point the island extends eastward $1\frac{3}{4}$ miles, with a maximum width of one mile. The island is rocky and is not more than 10 feet (3^m0) high, but is covered with a thick growth of light spruce and pine. Near the middle of the south side an excellent boat cove runs in one-third of a mile, whilst the eastern half of the north side forms the south shore of Greene Island Harbour. The west and south sides may be approached to 300 yards (274^m3); the northwest and southeast sides, to half a mile; whilst the east point and northeast side may be kept close on board.

45

Chart 2297.

Steevens Island is a small, low, well-wooded island, lying a quarter of a mile from the middle of the north side of Greene Island. Only boats can pass between Steevens and Greene Islands, and a bar, over which not more than
 5 10 feet (3^m0) may be carried, connects it in a northwesterly direction with Manitoulin Island.

Mink Reef, with less than 6 feet (1^m8) on it, is situated upon the latter bar, and lies half a mile westward from the north end of Steevens Island.

Greene Island Harbour, an excellent harbour, nearly 1½ miles square, is situated northeastward of Greene and Steevens Islands. Steevens Island has good water on its east and north sides and the north shore of the harbour may be approached to a third of a mile. The entrance is between Greene Island and Quarry Point, and is a mile wide, with 5 to 8 fathoms (9^m1 to 14^m6) of water. In the harbour itself, any depth from 3 to 8 fathoms (5^m5 to 14^m6) may be had,
 15 the best berth from wind and sea being probably close off the north side of Greene Island. The northeast side of Greene Island Harbour trends from Quarry Point northwestward 1½ miles to an old quarry and wharf, and thence westward to a little over 2 miles to a broken up point, whence a rocky bar extends to Steevens Island as before stated.

Lynn Point is situated 2 miles from the broken up point just mentioned, and 2½ miles eastward from the southwest point of Manitoulin Island. It is about half a mile long, low, and narrow, and off it, shoal water extends in a southwesterly direction a third of a mile.

Purvis Bank, awash, lies nearly a mile southeastward from Lynn Point.
 25 From the reef to a depth of 10 feet (3^m0), the shoal extends over a quarter of a mile in a southwest direction.

Carter Rock, awash, lies nearly 2 miles 139°, from the southwest point of Manitoulin Island. The bank is nearly triangular, the part awash being at the north end, and from it the bank extends southeast 300 yards (274^m3) to
 30 16 feet (4^m9), and southwest one-third of a mile to a depth of 18 feet (5^m5).

Clearing mark.—To pass southwest of Carter Rock keep Mississagi Strait light in sight clear of the trees south of it, bearing 348°.

Mississagi Strait is the channel 5½ miles long, by 1¼ miles in least width (opposite Cinder Point), separating Cockburn Island on the west from Manitoulin Island on the east. With the exception of Magnetic Reefs, Castilian Shoal with a small patch about three-quarters of a mile northeastward of it, and another patch, lying about two-thirds of a mile southward of Cinder Point, all of them on the west side, and Carter Rock on the east side, the shores and approaches, both north and south, are clean.

Light.—**Fog signal.**—On the mostly westerly point of Manitoulin Island, 5½ miles southwestward from Meldrum Point, is erected a white square wooden tower with dwelling attached, that from a height of 46 feet (14^m0), exhibits a
 fixed white light visible 15 (13 nautical) miles.

A fog diaphone sounds *two* blasts every 60 seconds from a building close
 45 southward of the light.

Telephone cable.—Crossing Mississagi Strait from the lighthouse to Cockburn Island at Cinder Point is a telephone cable.

Chart 2297.

The low rocky coast of Manitoulin Island, from Lynn Point to its southwestern extremity, is indented by a couple of foul bights, and shoal water extends from the shore an average distance of nearly two-thirds of a mile. From the southwest point of the island itself, a shoal bank extends southward a third of a mile, and thence, the coast trends northward nearly straight, $1\frac{1}{4}$ miles to the lighthouse, and is fringed with shoal water for a distance of 300 yards (274^m3). 5

The west coast of Manitoulin Island from the lighthouse to **Meldrum Point** (*Lat. $45^\circ 58'$ N., Long. $83^\circ 10'$ W.*) is gradually rounding and very steep-to excepting the $1\frac{1}{2}$ miles southwest of Meldrum Point, whence a fringe of shoal water extends 150 yards (137^m2). Meldrum Point is backed by a tree-covered ridge about 200 feet (61^m0) high. 10

(*For north coast of Manitoulin Island eastward of Meldrum Point, see Chapter X, page 308.*)

Cockburn Island, for the most part densely wooded, although farms have been cleared, is irregular in shape, about 12 miles in greatest length east and west, by 10 miles in greatest breadth north and south. The highest portion, **McQuaigs Hill** covered with trees, lies nearer the east side, and is 480 feet (146^m3) high. 15

Channel Point is the northeast extremity of Cockburn Island, and the west entrance point of Mississagi Strait from North Channel of Lake Huron. It is gradually rounding, and, steep-to. 20

(*For the north coast of the island between Channel and Monk Points see Chapter XI, page 353.*)

Cinder Point is the most easterly point of Cockburn Island, and is $3\frac{1}{2}$ miles southward of Channel Point. Between them is formed a slight bay, the shores of which, as well as that of Cinder Point, are steep-to. 25

Shoals.—Nearly a mile south from the most easterly part of Cinder Point is a small rock, with 18 feet (5^m5) least water over it. Southwestward $1\frac{1}{2}$ miles from Cinder Point is the middle of a very shallow bank, two-thirds of a mile long northeasterly and southwesterly, by a third of a mile wide. 30

The entrance to **Rickett Harbour**, a boat cove, a third of a mile long and 300 yards (274^m3) wide, is situated $2\frac{1}{4}$ miles southwestward from Cinder Point. Only 7 feet (2^m1) of water can be counted on in the entrance, with slightly deeper water inside. The east entrance point has shoal water extending off it south a quarter of a mile. 35

Magnetic Island is a wooded island lying close to the shore a mile southwest of Rickett Harbour.

Anchorage, in from 4 to 5 fathoms (7^m3 to 9^m1) over mud, will be found 200 yards (182^m9) north of Magnetic Island, but the shelter from southerly winds is not good. 40

Castilian Shoal, almost awash, lies one mile southeast from Magnetic Island. The shoal is over half a mile long north and south, a quarter of a mile in width, with shoalest spot near the middle. Three-quarters of a mile northeastward, there is a depth of 27 feet (8^m2), with 12 fathoms (21^m9) between it and Castilian Shoal. The passage between Castilian Shoal and Magnetic Island is half a mile wide, and clean, with as much as 11 fathoms (20^m1) in it. 45

Buoy.—A black spar buoy, equipped with a reflector band, is moored on the eastward side of the above-mentioned 27-foot (8^m2) spot.

Clearing mark.—To pass east of Castilian Shoal, keep Channel Point in sight east of Cinder Point, bearing 359° . 50

Chart 2297.

Boom Point is the most southerly point of Cockburn Island. It lies 3 miles southwestward from Magnetic Island, and between them the coast of Cockburn Island takes the form of three slight bays fronted by shoal water. From
5 Boom Point, a reef extends $1\frac{1}{4}$ miles southeastward, almost joining Middle Reef; and southerly over one mile from the same point, or about half-way to the south extremity of Magnetic Reefs.

Magnetic Reefs lie southeastward from Boom Point. There are at least
10 five distinct banks, with deep crooked channels between, not to be recommended to anyone.

South Reef, the most dangerous, is one mile long in a north and south direction, and three-quarters of a mile wide, with least water of 9 feet (2^m7) near the middle. Its southwest extremity is distant a little over 2 miles southeastward from Boom Point.

15 **East Reef** is awash in one spot, which lies 100° , distant $2\frac{1}{4}$ miles, from Boom Point. The dry spot is steep-to on its east side, but very shallow water makes out southwestward two-thirds of a mile; southeastward, over a third of a mile; and northward, nearly the latter distance.

20 **North, Middle, and West Reefs**, lying inside the other two reefs, are of less importance.

Caution.—Directions.—Vessels rounding Magnetic Reefs must use great caution, as no good clearing marks are available. Those having sextants, by keeping the angle subtended by Cockburn Island less than 85° , will not be less than three-quarters of a mile south or southeast of the reefs. The master
25 of a vessel, certain of his compass error, may haul into the strait when Mississagi Strait light bears 041° , until Channel Point comes in sight east of Cinder Point, bearing 359° .

Coast.—From Boom Point, the southwest coast of Cockburn Island trends northwestward, almost straight, $4\frac{1}{4}$ miles to a small cove and boat-landing
30 known as **Hyndman Bay**, close northeast of Pulpwood Point. This stretch of the boulder shore is fringed with shallow water for a distance of 200 yards (182^m9), as is also the south side of Boom Point itself. **Pulpwood Point** is an insignificant projection, from which shoal water extends southward over a third of a mile.

35 **McKay Rock**, with 12 feet (3^m7) least water on it, lies three-quarters of a mile southwestward from Pulpwood Point. The shoalest spot is near the middle of the rock, which is a quarter of a mile long north and south, and 200 yards (182^m9) wide. It is separated from Wagosh Reef (*see* page 59) by a passage over half a mile wide and 7 fathoms (12^m8) deep.

40 **Smith Point** (*Lat.* $45^\circ 52' N.$, *Long.* $83^\circ 29' W.$), long and narrow, is the southwest point of Cockburn Island, and lies with its southeast extremity 2 miles westward from Pulpwood Point, the two enclosing the bay next described. From Smith Point shoal water extends a quarter of a mile southward, and over a third of a mile southeastward.

45 From Pulpwood Point, the shore trends northwestward $1\frac{1}{4}$ miles, then west the same distance, and finally southward $1\frac{1}{2}$ miles to Smith Point, thus forming **Wagosh Bay**, the shores being lined with shoal water to the distance of half a mile. Excellent anchorage, and shelter from westerly winds, may be had in Wagosh Bay, between the reef and the bank from the west shore in 3 to 5
50 fathoms (5^m5 to 9^m1) over sand and mud.

Chart 2297.

Wagosh Reef, with 7 feet (2^m1) least water near its southern end, lies $1\frac{1}{4}$ miles northeastward from Smith Point, and runs to the shore of the bay one mile northward.

From Smith Point the coast runs northwesterly, 2 miles to the south extreme of Kitchener Island, which almost joins Cockburn Island. **Kitchener Island** low and well-wooded, is over three-quarters of a mile long north and south, by one-third of a mile in breadth at its north end, whence shallow water extends northward a quarter of a mile. The island is crescent-shaped, the bay being on the east side. The southwest and west sides are fringed with shoal water for a distance of 300 yards (274^m3). 5 10

Herschell Island, 250 yards (228^m5) long and the same distance from the coast of Cockburn Island, lies nearly a mile northeastward from Kitchener Island, the bay between being very shallow and foul.

Anchorage.—Southeastward of the line joining the north points of Kitchener and Herschell Islands, and close to the former, will be found excellent anchorage in 3 to 5 fathoms (5^m5 to 9^m1) over sand and mud, with shelter from almost all winds. 15

Wheeler Reef, 5 feet (1^m5) high and small, is situated over a third of a mile southwest from the southwest side of Kitchener Island. Shoal water extends from it nearly a third of a mile southward, and a quarter of a mile northwestward. The northeast side may be approached to within 100 yards (91^m4). The passage between it and Kitchener Island is 200 yards (182^m9) wide with a depth of 4 fathoms (7^m3). 20

Monk Point, which may be considered the eastern entrance point of False Detour Passage from North Channel of Lake Huron, is situated 6 miles northeastward from Herschell Island, the coast being generally clean outside the distance of 200 yards (182^m9) excepting the bay midway between, whence very shoal water makes out over a third of a mile. 25

(For the north coast of Cockburn Island between Monk and Channel Points, see Chapter XI, page 353.) 30

False Detour Channel, $6\frac{1}{2}$ miles long, in a northeasterly and southwesterly direction, forms part of the boundary line between Canada and the United States. It has Cockburn Island for its southeast, and Drummond Island for its northwest shore. 35

The International Boundary runs from a point in Lake Huron, whose latitude is $45^\circ 49' 17'' \cdot 13$ N., and longitude $83^\circ 35' 49'' \cdot 19$ W., and which is distant 6.8 miles, $238\frac{1}{2}^\circ$ from Smith Point, in a straight line for 14.5 miles through the middle of False Detour Channel to a point in the North Channel, whose latitude is $45^\circ 59' 53'' \cdot 96$ N. and longitude $83^\circ 26' 00'' \cdot 94$ W. and which is distant 2 miles, $067\frac{1}{2}^\circ$ from Marble Head. 40

Marble Head (*Lat. $45^\circ 59'$ N., Long. $83^\circ 28'$ W.*) is a gradually rounding wooded headland, about 100 feet (30^m5) high, forming the northeast extreme of Drummond Island and the northwest entrance point of False Detour Channel from North Channel to Lake Huron. Marble Head is steep-to. 45

(For description of the northeast and north coasts of Drummond Island, See Chapter XI, page 353.)

Chart 2297.

Southeast coast of Drummond Island.—This coast from Marble Head trends in a general southwesterly direction $5\frac{1}{2}$ miles to the unnamed southeast point of Drummond Island, and may be approached to 200 yards (182^m9) excepting the shores of the small bays whence shoal water extends a third of a mile. The narrowest part of False Detour Channel, one mile wide between the banks, is abreast of Kitchener Island.

A rock, with 32 feet (9^m8) least water upon it, lies 021° , distant $3\frac{1}{2}$ miles from the north point of Kitchener Island and about one mile off the southeast shore of Drummond Island. A rock, with 10 feet (3^m0) least water upon it, lies three-quarters of a mile in a southwesterly direction from the southeast point of Drummond Island.

Light-Buoy.—The above rock is marked by a black light-buoy showing a *flashing white* light moored on its eastern side.

Clearing mark.—Marble Head of Drummond Island touching the southeast point of the same island, bearing 025° , leads half a mile southeast of the rock.

Anchorage, with shelter from westerly winds in 3 to 9 fathoms (5^m5 to 16^m5) over mud, will be found off the middle of the southeast coast of Drummond Island. The rest of False Detour Channel is too deep for anchorage.

(The following description of the south coast of Drummond Island is taken from the latest United States Government survey.)

The south coast of Drummond Island is decidedly broken and marked by many indentations, outlying islands, and shoals. From east to west, the largest natural harbours are Big Shoal Cove, Huron Bay, Island Harbor, and Whitney Bay, with depths of 4 to 7 fathoms (7^m3 to 12^m8) over clay and rock. Owing to the numerous obstructions, these harbours should not be entered in foggy weather, nor without charts and local knowledge.

The southeast extreme of **Harbor Island** lies $1\frac{3}{4}$ miles westerly from the southeast extreme of Drummond Island, the shore being indented by **Bass Cove** and **Little Shelter Bay**, both nearly one mile long and shallow. The points have shoal water extending from them a distance of less than a quarter of a mile.

A patch, about half a mile in diameter, with 21 feet (6^m4) of water upon it, lies three-quarters of a mile south of Harbor Island, with deep water between it and the island.

From Harbor Island, the shallow shore runs for 2 miles in a northwesterly direction to the east entrance point of **Big Shoal Cove**, a bay three-quarters of a mile long from the line of its entrance points, containing good shelter in a depth of 4 fathoms (7^m3) over clay.

Big Shoal, with only 2 feet (0^m6) of water over it, extends in a southwesterly direction, $1\frac{1}{2}$ miles from the cove's east entrance point.

Scammon Point (*Lat. $45^\circ 56'$ N., Long. $83^\circ 38'$ W.*), forming the west entrance point of Big Shoal Cove, is situated 3 miles westward from Harbor Island, and between the point and Big Shoal are two reefs, the western with 5 feet (1^m5), and the other with 12 feet (3^m7) of water on it, forming dangerous obstructions in entering Big Shoal Cove.

Chart 2297.

From Scammon Point the coast of Drummond Island takes an abrupt turn northward for 2 miles and then southwestward for $3\frac{1}{4}$ miles forming **Scammon Cove**, with depths under 15 feet (4^m6).

Meade Island, occupying the middle of Scammon Cove, is three-quarters of a mile long north and south, half a mile wide, and is connected to the northwest side of the cove by very shallow water. 5

Distant $1\frac{1}{2}$ miles southwesterly from the south point of Meade Island is a horseshoe-shaped reef of boulders, half a mile in diameter, called **Horseshoe Reef**. Midway between it and Meade Island is another reef of equal size, also covered with boulders. Between the bank extending a quarter of a mile from the south point of Meade Island and the northwest reef, there are depths of 5 to 7 fathoms (9^m1 to 12^m8) and similar depths between the two reefs. 10

The indented, though generally straight, shore for $3\frac{2}{3}$ miles southwestward of Meade Island to Warners Cove is fringed with shallow water for a distance of a third of a mile. 15

Gravel Island, a third of a mile long north and south, and narrow, lies in the mouth of Huron Bay, nearly midway between Scammon Cove and Point Detour lighthouse, distant about $6\frac{1}{2}$ miles from each.

Holdridge Shoal, with 6 feet (1^m8) of water over it, is a dangerous obstruction lying 124° , distant 2 miles from the south point of Gravel Island and $1\frac{1}{2}$ miles from the nearest shore. A patch, small in extent, with 21 feet (6^m4) of water upon it, lies $2\frac{1}{2}$ miles westward of Holdridge Shoal, $1\frac{1}{4}$ miles 218° from the south point of Gravel Island. 20

Clearing marks.—In the daytime, to pass southwest of this shoal, keep the south points of Crab and Espanore Islands in line, bearing 310° ; and at night, keep Crab Island light-buoy in sight southwest of Espanore Island, bearing 303° . 25

Huron Bay.—Between the entrance points, this bay is 2 miles wide, and north from that line is $1\frac{1}{2}$ miles long. From the south point of Gravel Island a shallow spit extends in the line of the island nearly half a mile. There is a narrow channel between Gravel Island and the northwest shore of Huron Bay, but the best passage, nearly half a mile wide, is eastward of the island, between it and rocky ledges, with 5 to 13 feet (1^m5 to 4^m0) over them, which almost join the shallow water from the east side of the bay. 30

Espanore Island, three-quarters of a mile long in a northeast and southwest direction and one-third of a mile broad, is situated 3 miles westward from Gravel Island, and half a mile southeast from Point Anderson, being joined thereto by two small islands and a shallow bank. 35

A rock bank, with 3 to 4 feet (0^m9 to 1^m2) of water over it, extends half a mile eastward from the northeast point of Espanore Island narrowing the channel into Island Harbor to a quarter of a mile. Rocky ledges with boulders extend the same distance southward from the south point of the island. 40

Island Harbor is the name given to the limited space, with depths of 5 to 6 fathoms (9^m1 to 11^m0), northeast of Espanore Island. With the exception of a bank extending half a mile southward from the eastern entrance point, the east shore of the harbour is fairly steep-to, and should be kept on board in entering. 45

The islands at the head of the harbour are surrounded by shoals and a detached spot, with 15 feet (4^m6), lies a quarter of a mile north from the northeast extreme of Espanore Island.

Chart 2297.

- Whitney Bay** is contained between **Anderson** and **Barbed Points**, the first situated a mile northwest of Espanore Island and the last $1\frac{1}{2}$ miles northeastward from Point Detour lighthouse. The east and northeast shores of Whitney Bay are indented by three principal coves, the head of the northernmost of which is $2\frac{1}{4}$ miles from the line joining the entrance points. The harbour is sheltered from southwest winds by a group of islands, the four principal of which reckoning from the west are **Arnold**, **Bellevue**, **Bird**, and **Garden Islands**. The harbour has depths from 5 to 6 fathoms (9^m1 to 11^m0). **Garden** and **Bird** Islands are connected by shallow water, but there are deepwater passages between **Bird** and **Bellevue**, **Bellevue** and **Arnold Islands** and between the latter and the shore of **Barbed Point**.

- Shoals in the approach.**—A detached reef, with less than 6 feet (1^m8) of water on it, lies nearly a mile 308° from the southwest point of Espanore Island. A rock, with 7 feet (2^m1) on it lies $1\frac{3}{8}$ miles from the latter and on the line joining the same point to Point Detour. The southwest side of this rock is marked by a red conical buoy. A rock, awash, lies two-thirds of a mile southwest from Garden Island, and a bank with 5 feet (1^m3) upon it lies nearly in the same direction a quarter of a mile from Garden Island, leaving a depth of 6 fathoms (11^m0) between the island and bank.

Crab Island (*Lat. $45^\circ 58' N.$, Long. $83^\circ 53' W.$*) is the almost isolated extremity of Barbed Point, the southwest point of Drummond Island and east entrance point of Detour Passage.

- Crab Island Shoal.**—**Light-and-gong-buoy.**—This detached reef, one-third of a mile in length northwest and southeast, and with only one foot (0^m3) of water on it, lies a quarter of a mile southward from Crab Island and between them there is a depth of 6 fathoms (11^m0). Its western extremity is marked by a light-buoy painted red and showing a *flashing red* light every 4 seconds; a gong is mounted on the buoy, and it is fitted with a radar reflector.

- Point Detour** marks the western side of the southern entrance to Detour Passage; it is the extremity of a small peninsula extending southward from the mainland of the State of Michigan and is surrounded by outlying reefs and shoals.

Detour Reef, a rocky shoal, with a depth of 16 feet (4^m9), lies about 3,500 feet ($1,166^m8$), 141° , from Point Detour.

- Light.**—**Fog signal.**—**Radio beacon.**—On the southeast side of Detour Reef, a white square tower, on a concrete base, exhibits at a height of 74 feet (22^m6) a *flashing white* light every 10 seconds, with a red sector covering shoals to the west and north.

- When foggy in Lake Huron, but clear in Detour Passage, a diaphone at the lighthouse sounds *three blasts* every 60 seconds thus:—blast, *two seconds*; silence, *two seconds*; blast, *two seconds*; silence, *two seconds*; blast, *two seconds*; silence, *fifty seconds*.

When foggy both in Lake Huron and in Detour Passage, the whistle will sound thus:—blast, *six seconds*; silence, *fifty-four seconds*.

- A radio beacon, synchronized for distance finding, is located at the lighthouse.

Courses and Distances.—For separate courses as prescribed by the Lake Carriers' Association for Lake Huron and distance between ports, see pages xxvi and viii and chart 2297.

CHAPTER IV

ENTRANCE TO GEORGIAN BAY, WITH COASTS BETWEEN CABOT HEAD AND CAPE SMITH

DATUM.—See page 1.

Chart 2296.

5

CABOT HEAD (Lat. $45^{\circ} 15' N.$, Long. $81^{\circ} 17' W.$) may be easily identified by its three limestone cliffs, known as **Boulder, Middle, and West Bluffs**, the last of which is 310 feet (94^m5) in height. The eastern one derives its name from the huge moss-covered stone near the edge. (*For coast south of Cabot Head, see Chapter V, page 88*).

10

Light.—Fog signal.—On the lower cliff, one-quarter of a mile east from the entrance to Wingfield Basin, has been erected a white square wooden tower with keeper's dwelling attached, which from a height of 80 feet (24^m4) exhibits a *white light, flashing every 10 seconds*, visible 16 (14 nautical) miles.

The light is not visible from a vessel southwest of the line joining Cape 15 Croker and Cabot Head.

Close eastward of the lighthouse, a diaphone sounds *two blasts every minute*, thus:—blast, *three seconds*; silence, *three seconds*; blast, *three seconds*; silence, *fifty-one seconds*.

Wingfield Basin is a circular, well-sheltered harbour a quarter of a mile in 20 diameter, with a depth of 12 to 21 feet (3^m7 to 6^m4) over mud and rock, and situated between Boulder and Middle Bluffs. The entrance, 350 feet (106^m7) wide from shore to shore, is situated a quarter of a mile westward of Cabot Head light. It is obstructed by a bar of stones, over which was originally a depth of 5 feet (1^m5). A channel with a width of 75 feet (22^m9), and depth of 15 feet 25 (4^m6) at low stages, was dredged in 1933 across the bar, leading to the west entrance point. The bar is about 80 yards (73^m2) wide with deep water close to its northern side.

Leading lights.—On the south shore of the basin are erected two narrow white beacons, showing *fixed red* lights, which in line, bearing 173° , lead into 30 Wingfield Basin, through the dredged cut, with 15 feet (4^m6) of water at low stages.

Buoys.—Each end of the dredged channel is marked with a set of spar buoys, moored on the edge of the cut. To enter the basin, keep at least a quarter of a mile from the shore, until the light beacons are in line, then proceed in with 35 them ahead, bearing 173° , passing east of the red, and west of the black spar buoys. When through the cut, haul sharply to the west, where the best water will be found.

Cabot Head Shoal, with $4\frac{3}{4}$ fathoms (8^m6) of water, is the shoalest part of a rocky bank extending from the entrance of Wingfield Basin in a northeasterly 40 direction for nearly $1\frac{1}{2}$ miles.

Chart 2296.

Rocky Bay is situated $1\frac{1}{3}$ miles westward of West Bluff, and derives its name from the shoal water that extends a quarter of a mile from the beach with a depth of 9 feet (2^m7).

5 **Loaf Rock** is the name given to an immense block of stone 50 feet (15^m2) high, lying at the water's edge $6\frac{3}{4}$ miles west of Wingfield Basin and $2\frac{1}{3}$ miles eastward from Cave Point. A conspicuous landslide on the face of the cliff is situated nearly midway between Rocky Bay and Loaf Rock.

10 **Cave Point**, situated nearly $9\frac{1}{2}$ miles westward of Cabot Head light, and so called from the number of small caverns in its cliffy face, is 140 feet (42^m7) high, presenting the most conspicuous coast feature between Cabot Head and Tobermory. One mile westward of Cave Point occurs another white patch in the face of the cliff.

15 **Overhanging Point** is a cliff with a projecting apex 90 feet (27^m4) high, $2\frac{1}{2}$ miles westward of Cave Point. The water is especially deep close to this part of the coast, there being a depth of 80 to 90 fathoms (146^m3 to 164^m6) at half a mile and 40 fathoms (73^m2), 200 yards (182^m9) from the shore.

Driftwood and **Little Coves** are situated $2\frac{1}{3}$ and 4 miles, respectively, westward from Overhanging Point, affording shelter for boats from westerly winds.

20 **Dunks Bay** is divided into two parts, each of which contains shelter from west and northwest winds, in 4 to 7 fathoms (7^m3 to 12^m8) over sand. The head of the northern arm is distant three-quarters of a mile from Tobermory Harbour, across the land.

25 **Dunks Point** (*Lat. 45° 16' N., Long. 81° 38' W.*) is the name given to the northwest point of Dunks Bay. It consists of two small islets just separated from the main shore, and from them rocks extend northeastward 100 yards (91^m4). This point marks the western termination of the deeper water of Georgian Bay. For nearly three-quarters of a mile west of this point this shore is fringed with low rocks, which are steep-to.

30 **North Point** forms the northeast entrance point of Tobermory Harbour, and is steep-to on its north and west sides. (*See Eastern Arm.*)

Light.—A *fixed green* light is exhibited at an elevation of 30 feet (9^m1), from a steel tower with white daymark, on North Point.

35 **Tobermory Harbour** is situated at the northwest extremity of Bruce Peninsula, contains perfect shelter from all winds. It consists of **Eastern** and **Southwest Arms** (known locally at Little Tub Harbour and Big Tub Harbour, respectively); the latter extending from **Lighthouse Point** westerly a little over half a mile, with an average breadth of 100 yards (91^m4). The low limestone shore sinks down almost perpendicularly 7 or 8 fathoms (12^m8 or 14^m6), which depth, over soft mud, will be found all over this arm, excepting 40 near the head of the harbour whence a muddy flat extends 120 yards (109^m7) to a depth of 18 feet (5^m5).

Tobermory is a picturesque fishing village and a port of call for many large yachts and pleasure craft during the summer months. It is also the mainland 45 terminus of an automobile ferry service to South Baymouth.

The harbour being too narrow for vessels to lie conveniently at single anchor, they are compelled to make fast to the shores; to facilitate this the Government has had ringbolts sunk into the rock, and floating booms to keep them off the sharp edges.

Chart 2296.

Eastern Arm (Little Tub).—From North Point, shoal water extends 80 yards (73^m2) southward to the edge of the 3-fathom (5^m5) line, and thence to **Rixon Rock** in **Shoal Bight**; vessels proceeding to Eastern Arm should therefore give it the necessary berth. 5

A 200-foot (61^m0) steel pile wall extends across the inner end of the harbour, back-filled to the shore to form a driveway and parking place for traffic to and from the small boats. Extending outward from this wall are three landings, two 90 feet (27^m4) long and the other 75 feet (22^m9), with a depth of 10 feet (3^m0) alongside; gasoline is available. 10

Extending northeasterly from the southeastern end of the retaining wall, is the Government wharf, 250 feet (76^m2) in length. The Government ferry wharf, 310 feet (94^m5) long, is situated at the entrance to the Eastern Arm, immediately southward of Fisherman Cove. It was dredged to a depth of 15 feet (4^m6) (below 578.5) in 1948. On the eastern side of the harbour, directly 15 opposite, is Golden's fish dock, 100 feet (30^m5) in length.

Middle Point is the name given to the land dividing the two arms, and on the eastern side of it is an indentation known as **Fisherman Cove**. From this cove, shoal water extends half-way across Eastern Arm, but may be avoided by keeping the eastern shore on board. 20

Lights.—**Fog signal.**—A *fixed red* light is exhibited, at an elevation of 40 feet (12^m2), from a white, hexagonal tower with a red lantern, on Lighthouse Point.

A hand foghorn answers vessels signals.

A *fixed red* light is exhibited, at an elevation of 32 feet (9^m8), from a bracket 25 on the wharf warehouse, at the Ferry wharf on the west side of the entrance to Eastern Arm.

Coast.—The shore of Bruce Peninsula, three-quarters of a mile westward from Lighthouse Point, takes a turn southward for one-third of a mile to **Wreck Point**. 30

China Reef extends in a southwesterly direction half a mile from Wreck Point, with 5 to 12 feet (1^m5 to 3^m7) of water over it, and narrowing the channel between it and the southeast edge of Devil Island Bank to 200 yards (182^m9).

A vessel may pass northwestward of this reef by keeping the centre of Doctor Island under the middle of Flowerpot Island bearing 044°. 35

Buoys.—A red spar buoy is moored in 24 feet (7^m3) of water, on the northwestern side of China Reef. A similar buoy, moored in 15 feet (4^m6), marks the edge of shoal water 200 feet (61^m0) northward of Wreck Point.

From Wreck Point, the coast trends in a southeasterly direction one-third of a mile to the head of a small rocky indentation called **China Cove**. 40

Bonnet Island, so named for its clump of dark tinted trees somewhat resembling a plume, is small, and, with the point close off which it lies, divides China Cove on the north from Ragged Bight on the south.

Ragged Bight is three-quarters of a mile long, about as broad, and full of sunken rocks. There is, however, between them deeper water through which a 45 boat may pick her way to two well-sheltered narrow coves on the south shore.

Chart 2296.

Long Point Reef is the name given to a shoal 2 feet (0^m6) high, lying on the south side of the mouth of Ragged Bight. Between the shoal water off this reef and that from Bonnet Island, there is a channel of 12 feet (3^m7) into Ragged Bight. West, one-third of a mile from Long Point, is a rock, with 12 feet (3^m7) of water on it.

From Long Point, the shore trends southwesterly $1\frac{3}{4}$ miles to Cape Hurd, with shoal water extending from it an average distance of a quarter of a mile; to pass northwestward of which, keep the centre of Doctor Island in line with the middle of Flowerpot Island, bearing 044° (see page 72).

Cape Hurd (Lat. 45° 13' N., Long. 81° 44' W.), the west extremity of Bruce Peninsula, is low, flat, and covered with small timber. Between Cape Hurd and Cove Island there are four channels, which may be navigated in the daytime with fine weather, directions for taking which will be found further on. (For description of the Lake Huron shore south of Cape Hurd, see Chapter I.)

Southeast Bank is the name given to a large area of shoal water lying southward and separated from Devil Island Bank by deep water. This bank, with only 3 feet (0^m9) of water on it in places, is $1\frac{1}{3}$ miles long north and south, being connected with the shallow bank from the mainland by a disjointed bar of rocky patches, over which not more than 16 feet (4^m9) of water (in low stages there may be 6 feet (1^m8) less) can be relied on when taking Cape Hurd Channel.

Buoys.—A black spar buoy, equipped with reflectors, is moored in 21 feet (6^m4) of water to mark the western entrance to the channel passing south-eastward of Southeast Bank. A similar buoy, moored in 27 feet (8^m2) of water is placed off the eastern extremity of the bank, abreast of Ragged Bight.

Doctor Island, lying between the north extreme of Russel Island and Tobermory Harbour, has deep water close to all but its northeast side, whence a reef extends 100 yards (30^m5).

Russel Island is the largest of the three islands that lie between Bruce Peninsula and Cove Island. The passage between it and Doctor Island is good, with the exception of a rock, with 12 feet (3^m7) of water on it, lying 200 yards (182^m9) off a projecting point in the middle of the southeast side of Russel Island. This shoal may be avoided by keeping the east side of Flowerpot Island closed with the west side of Doctor Island, bearing 045°. The north side of Russel Island is steep-to, except for a 3-fathom (5^m5) patch lying offshore 300 yards (274^m3), a little over half a mile westerly from the northeast end of the island, but from the two islets that form the northwestern extreme a dangerous ledge of rock extends, named Russel Reef.

Russel Reef runs off from the islets above mentioned in a westerly direction half a mile, with depths of from 6 to 18 feet (1^m8 to 5^m5).

Buoy.—A red spar buoy is placed in 5 fathoms (9^m1), marking the west edge of Russel Reef.

Clearing marks.—To clear the north side of it, keep Dunks Point well in sight north of Russel Island, bearing 096°, and to pass northwestward of it, keep the southeast sides of Otter Islands touching, bearing 040°, thus also keeping in line the day beacons erected on the southeast sides of the same islands. On the east side of Russel Island is a well-sheltered cove having in it a depth of 6 feet (1^m8).

Devil Island is the southwesternmost of the three islands before mentioned and is surrounded by shoal water, leaving no passage for a vessel between it and Russel Island.

Chart 2296.

Devil Island Bank is the extensive area of shoal water stretching westward from the island for a distance of half a mile, where there is a depth of 12 feet (3^m7) called **The Spur**. The bank extends a quarter of a mile also southward of the island, with less than 6 feet (1^m8) of water on it, and, eastward, it continues over three-quarters of a mile, with less than 18 feet (5^m5) of water on it and in some places dry. 5

Buoy.—A red spar buoy is moored in 5 fathoms (9^m1) on the west edge of The Spur, and in the narrowest part of Devil Island Channel.

Earl Patches is the name given to two spots with 5 feet (1^m5) of water over them occupying the eastern portion of Devil Island Bank. 10

Clearing marks.—A vessel may pass southeastward of these patches and the whole of the bank by keeping the centre of Doctor Island under the middle of Flowerpot Island, bearing 044°.

Buoy.—A black spar buoy, moored southeast of Earl Patches, marks the north side of the eastern entrance to the channel passing southeastward of this shoal and Southeast Bank. 15

Southwest Bank, lying southwesterly 1 $\frac{3}{4}$ miles from Devil Island, is somewhat oval-shaped, with its greatest diameter one mile in length, northeast and southwest. It had, in 1885, depths on it varying from 9 to 18 feet (2^m7 to 5^m5). Owing to the remarkably uneven character of the rocky bottom of this and all the other large reefs in this neighbourhood, and hence the possibility of there being in some places less water than here given, they should not be crossed by the smallest craft, for in the event of a vessel grounding she would probably remain, owing to the almost daily prevalence of southwesterly winds and consequent sea. 20 25

Bell-buoy.—A bell-buoy, painted black, is moored in 5 $\frac{1}{2}$ fathoms (10^m1) off the south extremity of Southwest Bank. It is on the alignment of the South Otter Island day beacons, and is 2 $\frac{1}{4}$ miles distant from Devil Island.

Southwest Bank is separated from Middle Bank by a channel having a depth to 6 to 9 fathoms (11^m0 to 16^m5), and a quarter of a mile wide in its narrowest part; but from the absence of any conveniently situated conspicuous natural features on the mainland, no leading mark can be given to guide a vessel through. The same remark applies to what is practically a continuation of this channel, viz.,—the deep water separating Devil Island and Southeast Banks. North and South entrance points of Tobermory Harbour in line, bearing 067°, lead to Devil Island Channel southward of Southwest Bank. 30 35

Middle Bank, on the eastern portion of which there was in 1885 but 4 inches of water, lies about 1 $\frac{1}{2}$ miles westward of Devil Island and southeastward of Northwest Bank, being separated from the latter by a passage 200 yards (182^m9) wide known as **Macgregor Channel**. Middle Bank, under the depth of 3 fathoms (5^m5), is 1 $\frac{1}{4}$ miles long, northwesterly and southeasterly, by three-quarters of a mile wide. 40

Northwest Bank is the nearest to Cove Island, lying with its eastern extreme westward nearly two-thirds of a mile from White Rock. It is 1 $\frac{3}{4}$ miles long, east and west, by a little over one mile in breadth, with depths on it varying from 7 to 15 feet (2^m1 to 4^m6). 45

Chart 2296.

Clearing marks.—Dunks Point touching the south side of Turning Island, bearing 102° , leads north of this bank. The summit of Lucas Island in line with the southwest extreme of Cove Island (Gat Point), bearing 005° , leads 5 westward of it.

Otter Islands.—South Otter, nearly $1\frac{1}{4}$ miles around, and North Otter, a little larger in size, lie northerly, at respective distances of $1\frac{1}{4}$ and $1\frac{3}{4}$ miles from Russel Island. Both have a day beacon erected on their southeastern sides. These islands are separated from Northeast Point of Cove Island by 10 Otter Island Channel, which has deep water with the exception of a small rock with 10 feet (3^m0) on it lying 100 yards (91^m4) westward of North Otter, and nearly 200 yards (182^m9) northward from its southwest extreme. To pass through this channel, keep the east side of Echo Island in line with the northwest extreme of North Otter Island, bearing 040° .

15 Between the two Otter Islands themselves, 18 feet (5^m5) can be carried by keeping the northwest fall of Flowerpot Island, bearing 070° , in line with the southeast point of North Otter Island (trees, not the shore). This mark leads close to the north extreme of South Otter, in order to avoid the spit from the southwest point of North Otter Island. The remaining sides of Otter Islands 20 are steep-to.

Cove Island (*Lat.* $45^\circ 18' N.$, *Long.* $81^\circ 44' W.$) is the largest island lying in the southern part of the entrance from Lake Huron to Georgian Bay. It is 3 miles long northwesterly and southeasterly and about $1\frac{1}{3}$ miles wide.

The southeast side of Cove Island, from Northeast Point, is fringed with low 35 dry rocks, and some just covered, as far as The Gut into Cove Island Harbour. This fringe extends 100 yard (91^m4) from the shore, but is steep-to.

The Gut, through which a boat may carry 5 feet (1^m5) of water, is the name given to a break in the shore 30 feet (9^m1) wide, communicating with Cove Island Harbour.

30 A rock, with 12 feet (3^m7) on it lies 150 yards (137^m2) off the Gut, to clear which, keep the channel between North and South Otter Islands closed. Hence to Turning Island the shore is bold-to.

Turning Island is the most southerly part of the broken up portion of Cove Island. Three rocks, with 6, 10, and 15 feet (1^m8 , 3^m0 and 4^m6) of water 35 over them, lie respectively, one-third, one-quarter, and two-thirds of a mile westward from the south point of Turning Island.

Clearing marks.—To pass east and south of these rocks, keep the south extremity of South Otter Island open south of Turning Island, bearing 071° , in conjunction with White Rock, midway between the south end of Russel Island 40 and the north extreme of Devil Island, bearing 144° .

White Rock, so called from a collection of small white boulders on its summit, is 3 feet (0^m9) high and has deep water close to it on all but its southwest side, whence a rocky spit makes off 150 yards (137^m2).

Beacons.—On White Rock is erected a beacon painted white, 14 feet 45 (4^m3) high with a triangular cap.

On **Williscroft Island**, bearing 016° , half a mile from White Rock, is another beacon painted white, 24 feet (7^m3) high, with rectangular top. These beacons in line, bearing 015° assisted by the buoys, lead through Devil Island Channel (*see page 71*).

Chart 2296.

Greenfield is the name given to a circular shoal, with 3 feet (0^m9) of water on it, 200 yards (182^m9) in diameter, and situated one-third of a mile southward from Turning Island, and close eastward of White Rock.

Clearing marks.—To pass north of this shoal, keep the inner part of North Point of Tobermory Harbour in line with the north side of Russel Island, bearing 109°. The east side of Echo Island in line with the northwest side of North Otter Island, bearing 041°, leads east. Dunks Point, in line with the north end of Russel Island, bearing 095°, leads both south of this shoal and White Rock Spit, but across a patch with 21 feet (6^m4) over it. There is deep water between Greenfield Shoal and White Rock.

Harbour Island, round and conspicuous, is situated two-thirds of a mile northwest from Turning Island, and between them the shore is foul.

Harbour Island Reef, with 2 feet (0^m6) of water over it, extends from this island in a northwesterly direction a quarter of a mile.

Cove Island Harbour, the entrance to which is situated half a mile east from Harbour Island, is 350 yards (320^m0) long by 200 yards (182^m9) broad; in 1885, 12 feet (3^m7) water was carried in, and perfectly sheltered anchorage had, in from 15 to 18 feet (4^m6 to 5^m5) muddy bottom. The approach is not inviting to strangers on account of Harbour Island Reef and the shoal water which nearly meets it from **Channel Point** on Cove Island.

Between these reefs, however, there is a passage 100 yards (91^m4) in width, through which 4 fathoms (7^m3) may be carried by steering for the west entrance to Boat Passage just open, bearing 084°, until the south end of Russel Island is a little northward of the south and bare point of Turning Island, bearing about 143°. This range should be kept on, with a depth of 15 feet (4^m6), until White Rock is seen east of Harbour Island.

The shoal water will now be passed, and the entrance of the harbour may be steered for, keeping midway between the land on either side. Upon arriving at the narrows keep in the middle until the harbour begins to open, when to avoid a rocky spit, with 9 feet (2^m7) of water over it, on the starboard hand, keep sufficiently near the northwest shore to close **Bar Point**.

Boat Passage is the name given to a narrow channel separating the group of islands containing the harbour just described, from the main portion of Cove Island.

Southwest coast of Cove Island.—This coast, 2 $\frac{3}{4}$ miles long from Harbour Island to **Gat Point** (the narrow west extreme of Cove Island), is broken up into a number of bights and small islands, fringed with shoal water for a distance of a quarter of a mile.

Gat Point Reef, with depths on it varying from 4 to 15 feet (1^m2 to 4^m6), extends southwesterly a little over one-third of a mile from the point of that name. A patch, with 15 feet (4^m6) of water on it, bearing 184°, is situated a little over half a mile from Gat Point.

Clearing marks.—To pass westward of both these reefs, keep the whole of Yeo Island (see page 76) open westward of Lucas Island, bearing 009°, and to lead southwestward of it keep the north extreme of Russel Island in line with south end of Turning Island, bearing 113°.

Chart 2296.

Northwest coast of Cove Island.—This coast between Gat and Gig Points trends northeasterly for nearly $2\frac{1}{2}$ miles and is fairly bold-to, being at the same time fronted by a large bank, known as **Cove Island Ground** with depths varying from 4 to 10 fathoms (7^m3 to 18^m3) over rocky bottom. The lighthouse kept well open of Gat Point, leads northwestward of the shoal water extending in a southwesterly direction 300 yards (274^m3) from Gat Point.

Light.—Fog signal.—Radio-beacon.—A *flashing white* light every 5 seconds is exhibited, at an elevation of 90 feet (27^m4), from a white, circular stone tower, situated on Gig Point.

A diaphone sounds *three* blasts every 60 seconds.

There is a radio beacon at the station, which is synchronized with the fog diaphone for distance finding purposes.

Northeastward, 200 yards (182^m9) from the lighthouse, is a small rock, 2 feet (0^m6) high, which, as well as the remainder of Gig Point, may be approached to 100 yards (91^m4). Close southward of the lighthouse is a landing jetty.

Light-and-bell-buoy.—As a guide in approaching the entrance of Georgian Bay from Lake Huron, a buoy painted with black and white vertical stripes is moored in a depth of 23 fathoms (42^m1). The buoy, equipped with radar reflector, exhibits a *flashing white* light, and the bell is sounded by motion of the buoy on the waves. It bears 273° , distant 7 (6 nautical) miles, from Cove Island lighthouse.

Northeast coast of Cove Island.—In marked contrast to the Lake Huron side of this island, the northeast coast is entirely free from dangers.

From the lighthouse to Eagle Point, it trends $1\frac{1}{2}$ miles southeasterly and is indented by small points and coves.

Eagle Point (Lat. $45^\circ 19' N.$, Long. $81^\circ 43' W.$), bluff and steep-to, is situated half-way between North Otter Island and Cove Island lighthouse. In the large bight formed between Eagle Point and North Otter Island vessels may find shelter from southerly and westerly winds in 16 fathoms (29^m3) over sand and mud, half a mile from shore. A sailing vessel should not anchor nearer Cove Island than this distance, so that in the event of a shift of wind northward a common occurrence—she may have good room wherewith to get under way; more especially as the water does not materially lessen its depth until within 200 yards (182^m9) from this shore. This remark applies equally to the soundings between Eagle Point and Cove Island lighthouse.

Eagle Cove is the next small bay northward of Tecumseh Cove.

Tecumseh Cove is the name given to a snug little cove, with a depth of 5 fathoms (9^m1) over clay, situated over a mile southward of Eagle Point and three-quarters of a mile westward from Northeast Point. Either in this cove, or in the mouth of it, a small steamer may find in 12 to 14 fathoms (21^m9 to 25^m6) of water, temporary shelter from southeast to northerly winds, through west.

North Channel is the name given to the passage between Northwest Bank and Cove Island, and if the directions now given are exactly followed very good water may be carried through it; but on account of several isolated patches, with

Chart 2296.

15 to 21 feet (4^m6 to 6^m4) of water on them, one range only will not suffice to take a vessel in, unless of very light draught. These huge lumps of sunken rocks are situated between the eastern edge of Northwest Bank and Turning Island, arising abruptly from the bottom with deep water between them.

5

Directions for North Channel.—When approaching Gat Point of Cove Island, bring the northeast end of Russel Island in line with the south extreme of Turning Island, bearing 114° . Keep this range on, which will lead south of Gat Point shoals and north of Northwest Bank, until White Rock comes exactly half-way between the south end of Russel Island and the north point of Devil Island, bearing 148° . Steer now for White Rock on this range, until the south end of South Otter Island appears in sight southeastward of Turning Island, bearing 071° , when a vessel may haul eastward into the bay.

10

Directions for Macgregor Channel.—This channel has 6 fathoms (11^m0) least water in it, and may be taken from Lake Huron by bringing White Rock exactly under the centre of that part of Flowerpot Island which is visible clear of South Otter Island, bearing 071° . This leading mark should be kept on until Dunks Point appears in line with the north side of Russel Island bearing 095° . The latter range will lead a vessel of light draught eastward into the bay; but as it crosses a patch with 21 feet (6^m4) on it lying a quarter of a mile south from White Rock (*see* page 68), Dunks Point should, as soon as seen, be again closed until this patch is passed, when it may again be opened, or kept in line with the north end of Russel Island bearing 094° to lead north of Russel Reef. Or, the White Rock and Flowerpot Island range may be continued passing westward of White Rock and its spit by giving it a berth of 200 yards (182^m9).

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Devil Island Channel is the name given to the passage separating Middle and Southwest Banks on the west from Devil Island and Southeast Banks on the east, and its navigation is assisted by red spar buoys on Russel Reef and The Spur, and a black bell-buoy on Southwest Bank (*see* pages 66 and 67).

Directions.—In taking this channel from Lake Huron, Baptist Island (situated $1\frac{1}{2}$ miles southeastward of Cape Hurd), (*see* page 28), should be kept closed with the point near which it lies, bearing about 118° , until the southeast sides of Otter Islands are in line, bearing 040° , when they may be steered for on that bearing. From that position the beacons erected on the southeast sides of the Otter Islands should be seen in line. As the Otter Islands are close together and much alike in colour and shape, it is worthy of note that when on the necessary range a single tree (1885) on the east extremity of North Otter becomes conspicuous.

30

35

Just before the northwest extremity of Bruce Peninsula comes in line with the south side of Russel Island, North Otter should be closed a little, to pass rather farther westward of the Spur than this leading mark would do, although it does not pass over less than 5 fathoms (9^m1), if continued. When the inner side of North Point of Tobermory Harbour is in line with the south end of Russel Island, bearing 084° , the Spur is passed. The channel leading mark should, however, be kept on to lead westward of Russel Reef, until Dunks Point appears in sight north of Russel Island bearing 099° , when a vessel may haul eastward.

40

45

Directions for Cape Hurd Channel.—Between Southeast and Devil Island Banks on the northwest, and the shoal bank extending from Bruce Peninsula on the southeast, there is a passage by which 16 feet (4^m9) of water may be carried (in low stages there may be 6 feet (1^m8) less).

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Chart 2296.

In taking this channel from the southwest, Baptist Island (Chapter I, page 28) should be kept closed with the point near which it lies, bearing 118° , until the centre of Doctor Island is in line with the middle of that portion of Flowerpot Island seen clear of the Bruce Peninsula, bearing 044° . When the marks are exactly on, the highest tree on Doctor Island will fit into the hollow near the middle of Flowerpot Island, and a small portion of the latter will be behind the northwest extreme of Bruce Peninsula.

Proceed past Cape Hurd with this leading mark on, reducing speed and keeping the lead going. When $1\frac{1}{4}$ miles past Cape Hurd the water will deepen to 6 or 7 fathoms (11^m0 or 12^m8). As soon as Gat Point of Cove Island comes in line with the southwest side of Devil Island bearing 327° , a vessel should haul westward to bring the same part of Doctor Island under the centre of the whole of Flowerpot Island, in order to lead more fairly between China Reef and Earl Patches. When Gat Point touches the south side of Russel Island, bearing 317° , these dangers will be passed, and Doctor Island may be left on either side.

To lead westward of the shoal water lying between Cape Hurd and Gat Point of Cove Island, keep the summit of Lucas Island in line with, or open west of Gat Point, bearing 005° .

In thick weather, or at night, the reefs just described should not be approached to a less depth than 20 fathoms (36^m6).

Echo Island, 140 feet (42^m7) high situated $1\frac{1}{4}$ miles eastward of Eagle Point of Cove Island, is almost round, nearly one-third of a mile in diameter and is steep-to on all sides.

Middle Island, small and round, lies almost midway between Flowerpot Island and Tobermory Harbour, and is also steep-to on all sides.

Flowerpot Island, about 2 miles northward of Dunks Point, is well wooded and derived its name from three remarkable isolated rocks that formerly stood close to the east shore. Only one of these, 50 feet (15^m2) in height, is now standing and being much eroded at the base, with a few small trees on its summit, resembles a gigantic flowerpot. It will probably, at no distant date, be undermined by the action of the waves, and suffer the fate of the other two that have fallen.

The Castle (*Lat. $45^{\circ} 18' N.$, Long. $81^{\circ} 37' W.$*) is the name given to a detached cliffy portion of this island at its northeastern extremity, elevated 200 feet (61^m0).

A spit runs off the south point of the island for a distance of 300 yards (274^m3), and a bar of rocks lies across the mouth of **Beachy Cove**, on the south-east side of Flowerpot Island. Shoal water makes out a distance of 200 yards (182^m9) around the west point of the island. Elsewhere, the island may be approached to 100 yards (91^m4) and in some places closer.

Light.—Fog signal.—A *fixed white* light is exhibited, at an elevation of 88 feet (26^m8), from a white, square building surmounted by a red lantern, visible 17 miles, on the Castle.

A fog diaphone sounds *one* blast every 60 seconds.

McElhinney Ground, a small patch with 30 feet (9^m1) least water on it, lies about 300 yards (274^m3) northward of the track usually followed by vessels between Flowerpot Island and Cove Island lights. It bears 304° and is distant one mile from the former.

Chart 2296.

Bears Rump is the name given to an island having somewhat the outline of that animal, and is situated 5 miles northeast of Dunks Point. Its northeast end is faced by a steep cliff, 80 feet (24^m4) high, the summit of the island being considerably higher. The southwest side is low, and from it extends, for a third of a mile, a reef known as **Bears Rump Shoal**. 5

Light-and-bell-buoy.—In 7 fathoms (12^m8) of water, three-eighths of a mile, 217° from the south extreme of the island, is moored a black light-and-bell-buoy showing a *flashing white* light.

Clearing marks.—To pass south of this reef, keep Cove Island lighthouse shut in with the northeast end of Flowerpot Island, bearing 283°, an especially good mark at night. The northwest side of Doctor Island touching the southeast side of Middle Island, bearing 243°, leads southeastward of this shoal; to pass northwestward of it keep the same part of Doctor Island in line with the southeast side of Flowerpot Island, bearing 235°. 10 15

Snake Island is the name given to a narrow ridge of small boulders, elevated 5 feet (1^m5) above the bay, and forming the southeastern terminus of an extensive rocky bank on the Georgian Bay side of the entrance known as **Great Barrier**.

This narrow dry ridge is nearly a third of a mile long, the southeast end being bare and white. While the opposite extreme had upon it, in 1885, two conspicuous bushes. Scattered dry stones lie northwestward of the latter a distance of 350 yards (320^m0). 20

Snake Island Bank, under the depth of 30 feet (9^m1), extends westward 1½ miles from this bare end of Snake Island, with an average breadth of three-quarters of a mile. 25

Confiance Rock, with 18 feet (5^m5) least water over it (in low stages there may be 7 feet (2^m1) less), lies with its nearest part distant a little over a quarter of a mile westward from the west extreme of Snake Island Bank. The shoal is three-quarters of a mile long, northwest and southeast, and a little less in breadth.

Clearing mark.—The fall of Cabot Head in line with the southwest extreme of Bears Rump, bearing 108°, leads in 27 feet (8^m2) of water, a quarter of a mile south of the shoalest part of Confiance Shoal. 30

White Shingle is the name given to a collection of stones sometimes 2 or 3 feet (0^m6 or 0^m9) above, but in 1884 covered by one foot (0^m3) of water. The centre bears from Cove Island lighthouse 060° distant 4 miles and, under the depth of 4 feet (1^m2), is over a quarter of a mile long in a northwesterly and southeasterly direction. At this distance eastward from its centre is another shoal spot with 5 feet (1^m5) over it. The whole of White Shingle Bank, under the depth of 12 feet (3^m7), is two-thirds of a mile in diameter. With Tilton Reef (see page 74), it forms a bank which, under the depth of 5 fathoms (9^m1) spreads 2 miles northwestward and southeastward, and is one mile in breadth. 35 40

Clearing marks.—A vessel may stand toward this bank and to the whole of Great Barrier from the southwest, except near Confiance Rock, until the southwest extremity of Fitzwilliam Island is in line with the northeast extreme of Yeo Island, bearing 312°. 45

Great Barrier may be crossed between Snake Island Bank and White Shingle, by keeping the east side of Echo Island in line with the west fall (not the extreme point) of North Otter Island, bearing 217°, with 21 feet (6^m4).

Chart 2296.

The west side of Echo Island touching Northeast Point of Cove Island (Otter Island Channel), bearing 205° , leads between the same two banks, with $5\frac{3}{4}$ fathoms (10^m5).

- 5 The south end of Bears Rump in line with Snake Island bushes, bearing 132° , leads northeastward of White Shingle Bank, and of Great Barrier generally, excepting, of course, Snake Island Bank itself.

A patch of $4\frac{1}{2}$ fathoms (8^m2) lies one-third of a mile northward from the north end of White Shingle.

- 10 **Tilton Reef**, with depths varying from 11 to 21 feet (3^m4 to 6^m4), is rather more than one mile long in a northwest and southeast direction, with an average breadth of one mile. It is the next shoal northwest of White Shingle Bank, being separated therefrom by a narrow lane of water with a depth of 5 fathoms (9^m1).

- 15 **Clearing marks.**—To cross Great Barrier over the western part of Tilton Reef with 21 feet (6^m4), keep the whole of North Otter Island a little open westward of Echo Island, bearing 177° . The southwest extreme of Fitzwilliam Island in line with the northeast end of Yeo Island, bearing 312° , leads southwest; and the south point of Bears Rump touching Snake Island bushes, bearing 130° ,
20 leads northeast of Tilton Reef.

Gourdeau Patch is the name given to a spot of $4\frac{1}{2}$ fathoms (8^m2) lying half a mile northwest from the northwest extreme of Tilton Reef, with 9 to 10 fathoms (16^m5 to 18^m3) of water between them.

- 25 With the exception of the last mentioned patch of $4\frac{1}{2}$ fathoms (8^m2), **Hardie Rock** is separated from Tilton Reef by a depth of 7 to 10 fathoms (12^m8 to 18^m3), and a distance of a little over one mile. The depth on Hardie Rock is 19 feet (5^m8), the whole area under the depth of 5 fathoms (9^m1) being three-quarters of a mile in diameter. From the shoalest part, the southwest extreme of Yeo Island is in line with the northwest end of Lucas Island, bearing 282° ,
30 distant from the latter $2\frac{2}{3}$ miles. A vessel may cross Great Barrier in fine weather on this range with 19 feet (5^m8) of water (in low stages there may be 6 feet (1^m8) less).

- Anderson Ledge**, the northwesternmost shoal on Great Barrier, has a circular shape, and within the depth of $4\frac{1}{2}$ fathoms (8^m2) a diameter of two-thirds
35 of a mile. Its shoalest spot of 12 feet (3^m7), bears 092° , $1\frac{3}{4}$ miles from the northeast point of Lucas Island.

- Clearing marks.**—The southwest extreme of Yeo Island in line with the northeast end of Lucas Island, bearing 282° , leads south of this shoal spot. The southwest end of Fitzwilliam Island touching the northeast side of Yeo Island,
40 bearing 312° , leads southwest of it. The south point of Bears Rump in line with Snake Island bushes, bearing 130° , leads northeast of Anderson Ledge. The south end of **Long Beach** (Fitzwilliam Island), touching the east side of James Island, bearing 006° , leads three-quarters of a mile westward of this spot of 12 feet (3^m7).

- 45 In thick weather or at night the portion of the Great Barrier northwestward of Confiance Rock should not be approached to a less depth than 10 fathoms (18^m3). The northeast or Georgian Bay side of the whole of Great Barrier should not be approached under the same circumstances to less than 20 fathoms (36^m6).

Chart 2296.

Lucas Island (*Lat. 45° 24' N., Long. 81° 46' W.*), 100 feet (30^m5) high, is situated $4\frac{2}{3}$ miles, bearing 342°, from Cove Island lighthouse. The west and south sides of this island are steep-to.

Light.—A *group flashing white* light is exhibited, at an elevation of 38 feet (11^m6), from a pole with a white diamond-shaped daymark, on the north side of the island. It is visible between the bearing 040°, through South, to 229°. 5

Lucas Reef, with depths under 6 feet (1^m8), extends a quarter of a mile in an easterly direction from the northeast part of the island.

Clearing mark.—To pass eastward of this reef, keep the east fall of Fitzwilliam Island open the breadth of James Island eastward of the latter, bearing 014°. 10

Lucas Channel is the passage between Lucas Island and Anderson Ledge, over three-quarters of a mile wide, with depths varying from 5 to 20 fathoms (9^m1 to 36^m6). 15

Directions for Lucas Channel.—To pass through this channel from the south, keep the south end of Long Beach (Fitzwilliam Island) in line with the east side of James Island, bearing 006° until the southeast side of Yeo Island appears end on, bearing 250°, when a vessel may haul northeastward, being well clear of Great Barrier. 20

Main Channel is the name given to the principal entrance into Georgian Bay from Lake Huron between Lucas and Cove Islands.

Bad Neighbour Rock, with 3 feet (0^m9) of water over it (at low stages it will be dry), is the worst danger in Main Channel, lying 330°, $2\frac{3}{4}$ miles from Cove Island lighthouse, and 170°, 2 miles from the southwest point of Lucas Island. 25

In addition to this very shoal spot, there are two small patches (with 11 feet (3^m4) on each of them) lying southwesterly 200 yards (182^m9), and southerly a quarter of a mile from Bad Neighbour. In approaching this danger from the east or south, in thick weather or at night, great caution is necessary, as the whole reef rises abruptly from the bottom on those sides, there being over 40 fathoms (73^m2), at a distance of a quarter of a mile, and 30 fathoms (54^m9) within 150 yards (137^m2). 30

Clearing marks.—To pass southwestward of this rock, keep Eagle Point (Cove Island) touching the northeast extreme of Gig Point, bearing 138°. The east extreme of Yeo Island touching the west side of Lucas Island, bearing 008°, leads west of Bad Neighbour. The same extreme of Yeo Island, bearing 347°, in line with the other or northeast side of Lucas Island, leads east of it. 35

From the top of the rock, **Black Summit** of Yeo Island is exactly over, and in line with, the southwest extremity of Lucas Island, bearing 350°. 40

Buoy.—A spar buoy, painted black, is moored a quarter of a mile southwest from the shallowest part of Bad Neighbour.

West Sister and **East Sister** are the names given to two rocky patches, on each of which there is a depth of 21 feet (6^m4) (in low stages there may be 6 feet (1^m8) less). They lie northwest $3\frac{1}{2}$ miles and 4 miles, respectively, from Cove Island lighthouse. 45

Clearing mark.—To pass between them and Bad Neighbour, keep Eagle Point of Cove Island open slightly northward of the north extremity of Gig Point, bearing 139°. To pass southward of the Sisters, bring the south point of Echo Island to touch Cove Island lighthouse, bearing 121°. 50

Chart 2296.

Vessels of heavy draught, in bad weather, should use the latter range, especially as Echo Island is more easily recognized than Eagle Point.

At night Cove Island light should not be brought to bear southward of 115° .

- 5 **Note.**—It may be mentioned here that no vessel should rely upon clearing a rock by the single bearing of a light, unless her compass is correct, or the error on that particular bearing well known. In this connection, it may be stated that an excellent opportunity is afforded, by comparison of the ship's course, with the correct compass bearings accompanying the many day ranges given in
10 these Sailing Directions, whereby the error of the ship's compass, on those particular courses, may be ascertained.

Buoy.—A red conical buoy, equipped with a red reflector band, is moored in 45 feet (13^m7) of water, on the northwest extremity of West Sister Patch.

- 15 **O'Brien Patch**, with 5 fathoms (9^m1) of water on it, lies 292° , distant $2\frac{1}{8}$ miles from Cove Island lighthouse. The water is very deep on all but the east and northeast sides of the patch. A rock, with 19 feet (5^m8) least water on it, lies $1\frac{7}{8}$ miles, 314° from Cove Island light and bearing 065° , distant seven-eighths of a mile, from O'Brien Patch. Water is deep all around this rock except in the southwest. Another rock, small in extent with 24 feet (7^m3) least water
20 on it, bears 076° , distant three-quarters of a mile, from O'Brien Patch, 306° , distant $1\frac{3}{4}$ miles from Cove Island lighthouse. The water is very deep on all but the western and northeastern sides of this rock.

About midway between O'Brien Patch and the rock last described is a depth of $5\frac{1}{2}$ fathoms (10^m1).

- 25 **Light-buoy.**—A black and red horizontally-striped, light-and-bell-buoy, showing a *flashing green* light, is moored between O'Brien Patch and the $5\frac{1}{2}$ fathom (10^m1) spot, just mentioned.

- Clearing marks.**—To pass between Bad Neighbour and the 19-foot (5^m8) rock, lying seven-eighths of a mile eastward of O'Brien Patch, keep Eagle Point
30 of Cove Island open slightly northward of the north extreme of Gig Point, bearing 139° . These marks, as already mentioned, also lead between the Sisters and Bad Neighbour shoals. To pass south of O'Brien Patch and the rock lying three-quarters of a mile eastward of it, keep Flowerpot Island light in line with Cove Island light, bearing 103° . To pass between the same two shoals, keep
35 the south point of Echo Island in line with Cove Island lighthouse, bearing 121° .

- Yeo Island** (*Lat. $45^{\circ} 25' N.$, Long. $81^{\circ} 47' W.$*) is $1\frac{1}{2}$ miles long, by two-thirds of a mile in breadth, and lies in a northwest direction distant $5\frac{1}{2}$ miles from Cove Island light. It has two summits, each about 100 feet (30^m5) high,
40 the northeasternmost, known as **Black Summit**, falling steeply to the water. The northeast, east, and southeast sides of Yeo Island are fairly steep-to, but from the north gravelly point 200 yards (182^m9) northwest of Black Summit, a rocky spit, with less than 6 feet (1^m8) over it, makes out a quarter of a mile in a northerly direction, under the name of Yeo Spit.

- 45 **Yeo Spit—Clearing mark.**—To pass northeastward of this spit, keep Cove Island lighthouse in sight (and at night, the light), bearing 163° .

- From the gravelly point, the north shore of the island runs westward fairly straight, with deep water for nearly a mile. The west or Lake Huron side of Yeo Island is indented by two excellent boat coves. A rock, with 7 feet (2^m1) of
50 water over it, lies 200 yards (182^m9) off the mouth of the northern cove.

Chart 2296.

The Knob is the name given to an almost isolated bushy lump forming the southwest point of Yeo Island.

Manitoba Ledge is a dangerous reef situated westward of Yeo Island, being separated therefrom by a channel, with a depth of 7 fathoms (12^m8), but which should not be attempted by strangers. 5

This ledge, under the depth of 18 feet (5^m5), is three-quarters of a mile long northeast and southwest, by more than a third of a mile broad. The northeast end, with only one foot (0^m3) of water on it, usually breaks. The southwest extreme, with 6 feet (1^m8), lies west, three-quarters of a mile from the Knob. 10 The west edge of the bank, at the depth of 15 feet (4^m6), is situated northwestward distant one mile from the same.

Clearing marks.—To pass southwest of this ledge, keep Eagle Point open northward of Gig Point, bearing 138° , or if Eagle Point be not easily distinguishable at this distance, keep the north end of North Otter Island in line with the lighthouse, bearing 134° . The latter mark will lead still farther southwestward from Manitoba Ledge. 15

Yeo Channel, as the passage between Yeo and Lucas Islands is called, is the best and most direct passage into Georgian Bay for a vessel bound to the eastern part of the North Channel from the southern part of Lake Huron. 20

Light-buoy.—A black light-buoy, showing a *flashing white* light, marks the shoal water off the southeast extremity of Yeo Island.

Shoal-buoy.—The following shoals with bearings and distance from Lucas Island light (*see* page 75) are situated in Yeo Channel: $2\frac{3}{4}$ fathoms (4^m9), 9 cables, 266° ; 5 fathoms (9^m1), 4.8 cables, $260\frac{1}{2}^\circ$; $6\frac{3}{4}$ fathoms (12^m8), 10 cables, 256° . 25

A black can buoy, equipped with a radar reflector, is moored on the north side of the above 5 fathom (9^m1) shoal.

Directions for Yeo Channel.—The range for clearing Gat Point Reef, viz., the east extremity of Yeo Island, open west of the west end of Lucas Island, may be continued, bringing the points touching when past Gat Point. This mark will lead between the Sisters and Bad Neighbour. On approaching Lucas Island, pass westward of it—the water is good on that side—and a course of 034° will lead a quarter of a mile eastward of James Reef (*see below*). In approaching this channel from the west, South Bluff of Lonely Island in line with southeast point of Yeo Island, bearing 054° , leads southeast of Manitoba Ledge. 30 35

James Island, 9 feet (2^m7) high, is nearly a quarter of a mile long north and south, by half the distance in breadth. It lies northeast $2\frac{1}{4}$ miles from Black Summit of Yeo Island. Its north side is fairly steep-to, but a rocky ledge extends southwestward from it, with depths under 15 feet (4^m6) for a distance of rather more than a mile, and a width of nearly three-quarters of a mile. 40

James Reef, as the above shoal is called, has a channel between it and Yeo Island Spit over three-quarters of a mile in width, and 4 to 8 fathoms (7^m3 to 14^m6) in depth, to pass through which, keep the west extreme of Lucas Island locked with the east point of Yeo Island, bearing about 182° .

Smith Rock, a small rocky patch with 3 fathoms (5^m5) over it, lies one mile northwestward from Yeo Island. A bank, with 6 to 9 fathoms (11^m0 to 16^m5), joins this rock and McLellan Rock, from which it is separated by a distance of a little over half a mile. 45

Chart 2296.

McLelan Rock, with 12 feet (3^m7) of water over it, is the worst obstruction in Fitzwilliam Channel. It is 300 yards (274^m3) long in an easterly and westerly direction, by 200 yards (182^m9) broad, and the centre of the shoal is situated $1\frac{1}{4}$ miles southward from Indian Harbour Point. The passage between this rock and Indian Harbour Reef is one-third of a mile wide, and 7 to 9 fathoms (12^m8 to 16^m5) deep.

Clearing mark.—The west point of Flowerpot Island open to the southwest point of Yeo Island, bearing 132° , leads southwest of Smith Rock, McLelan Rock and Indian Harbour Reef.

Fitzwilliam Island, situated on the northern side of the entrance to Georgian Bay, is $8\frac{1}{2}$ miles long northeast and southwest, and 4 miles in its greatest breadth.

Owen Channel, $1\frac{1}{4}$ miles wide, separates it from Manitoulin Island.

Fitzwilliam Channel is the name given to the passage, a little over two miles wide, on the southeast side of the island, separating it from Yeo and James Islands.

Indian Harbour Point is the name given to the southern extreme of Fitzwilliam or, as it is sometimes called, **Horse Island**. It forms also the southeastern point to **Indian Harbour**—a boat cove much resorted to by the Manitoulin Indians during the trolling season for trout in autumn.

Indian Harbour Reef is a dangerous rocky ledge extending in a southwesterly direction nearly a mile from the above mentioned point, with depths on it varying from 4 to 18 feet (1^m2 to 5^m5).

Clearing mark.—To pass southeastward of this reef, with 22 feet (6^m7) (in low stages there may be 6 feet (1^m8) less) of water, keep the south extreme of Club Island a little open southeast of Fitzwilliam Island, bearing 051° .

Currents.—It has been reported that, between Fitzwilliam Island and Tobermory, strong currents of as much as 5 or 6 knots may be encountered with a change of wind.

Southwest coast of Fitzwilliam Island.—This coast from Indian Harbour Point takes a general northwesterly direction nearly $2\frac{3}{4}$ miles to Perseverance Island. It is broken up into several open, deep bights, studded with rocks, and offering no shelter to vessels.

Emily Maxwell Reef is an extensive rocky shoal extending southwesterly one mile from the point nearly midway between Indian Harbour and Perseverance Island. This shoal, in 1885, had 4 feet (1^m2) of water upon it.

A rock, with 18 feet (5^m5), of water over it, lies nearly a quarter of a mile southwesterly from the southwestern extremity of Emily Maxwell Reef.

Clearing marks.—The range given above, viz.:—the west point of Flowerpot Island open of the southwest point of Yeo Island, bearing 132° leads in 27 feet (8^m2) southwest of this shoal also. The west point of Perseverance Island in line with the fall of Manitoulin Island to Lake Huron, bearing about true north leads westward of Emily Maxwell Reef.

Perseverance Island is half a mile long in a northeasterly and southwesterly direction, and quite narrow, and from the southwest extreme, shoal water makes off westerly and southerly a third of a mile.

Chart 2296.

A depth of 30 feet (9^m1) was found a little westward and nearly half-way between the western extreme of Perseverance Shoal and the rock above described.

From Perseverance Island, the coast of Fitzwilliam Island trends 2½ miles northeastward to Phoebe Point.

Phoebe Point (Lat 45° 30' N., Long. 81° 50' W.) may be considered as the southeast entrance point of Owen Channel. Between them is a large and shoal indentation known as **Wild Bight**. From Phoebe Point, the coast continues northeastward 2½ miles to Beach Point, the terminus of the shallow water of Owen Channel on the Fitzwilliam Island side.

Little Rock, with 13 feet (4^m0) of water on it, is a small patch lying 1½ miles northward from the southwest extreme of Perseverance Island. A rock, with 18 feet (5^m5) of water on it, bears 002° distant 1⅔ miles from the same island. These are the shoalest outlying spots between Perseverance Island and Phoebe Point.

Channel Rock, 6 feet (1^m8) high, and sufficiently separated from the shore of Fitzwilliam Island as to render it conspicuous, is situated one-third of a mile northeastward from the north part of Phoebe Point. Between the latter and Channel Rock, shoal water extends from the shore 300 yards (274^m3).

Stewart Rock, with 4 feet (1^m2) of water on it, lies a third of a mile northwest from Channel Rock. From Stewart Rock, the bank continues in a southwesterly direction half a mile, with a depth of 12 to 18 feet (3^m7 to 5^m5).

Ship Bank is an extensive piece of shoal ground lying southwest of and separated from Stewart Rock by a narrow lane of 4 fathoms (7^m3). The least water on Ship Bank is 10 feet (3^m0). The length of the shoal under the depth of 18 feet (5^m5) is nearly three-quarters of a mile northeast and southwest, by a third of a mile in breadth. A patch of 4 fathoms (7^m3) lies 350 yards (320^m0) northwestward from the northwest angle of Ship Bank.

Owen Island, 1¼ miles northward from Channel Rock, is 200 yards (182^m9) long north and south, and separated from the Manitoulin Coast by a similar distance. It is the only small island on either shore of Owen Channel, and therefore easily recognizable.

Owen Island Bank, with depths varying from 12 to 18 feet (3^m7 to 5^m5), extends on all sides from Owen Island; the depth of 13 feet (4^m0) being found at two-thirds of a mile east of the south extremity, and the same depth a quarter of a mile southward of the same. This bank renders the shore of Manitoulin Island shoal for over three-quarters of a mile from Owen Island toward Georgian Bay, and the same distance in the direction of Lake Huron.

Northeastward, nearly two-thirds of a mile from the south point of Owen Island, is the southern end of a rocky spit, having 7 feet (2^m1) of water on it, extending a quarter of a mile from the shore abreast.

(For description of the southwest coast of Manitoulin Island, northwest of Hungerford Point, see Chapter III, page 37).

Beach Point of Fitzwilliam Island derives its name from the fact of its being the northeasterly termination of a long stony beach, with four small sharp points of rock jutting out on it. This point is important as being the boundary between the shallow and deep waters on this side of Owen Channel.

Beach Point Flat is the name given to an extensive rocky bank, with from 12 to 15 feet (3^m7 to 4^m6) over it, fronting the beach just alluded to. It commences at Beach Point, and its north edge runs westward two-thirds of a mile.

Chart 2296.

Thence under the name of **The Ridge**, it joins Owen Island Bank, with 17 feet (5^m2) of water (at low stages there may be 6 feet (1^m8) less). The northeast side of The Ridge rises abruptly from a depth of 10 fathoms (18^m3). The edge of Beach Point Flat stretches a quarter of a mile off the southwest end of the beach whence it derives its name. Hence it continues almost straight to Channel Rock described above.

North Coast of Fitzwilliam Island.—From Beach Point, the coast trends easterly 3½ miles to Rattlesnake Harbour and is comparatively steep-to, the 5-fathom (9^m1) line being generally 300 yards (274^m3) distant from the shore, except when nearing Little Island.

Rattlesnake Harbour.—The north entrance point, called **Rattlesnake Point**, of this excellent harbour is situated a little over three-quarters of a mile southwestward from North East Point. It provides shelter from all winds in 3 to 5 fathoms (5^m5 to 9^m1) over mud. There are a few huts in the harbour.

Little Island, upon which are the ruins of a large icehouse, is a good mark in approaching the harbour. A narrow ridge of dry stones extends from the island northeasterly 200 yards (182^m9); from the end of these stones, shoal water continues in a northeasterly direction 200 yards (182^m9). The dry stones at the southwest extremity of Little Island are separated from those lying off the coast of Fitzwilliam Island by a narrow boat channel, with a depth of not more than 6 feet (1^m8).

From Rattlesnake Point, a spit extends in a westerly direction, 200 yards (182^m9), leaving a passage between it and the shoal water from Little Island, before alluded to, 300 yards (274^m3) in width, through the middle of which 18 feet (5^m5) was carried into the harbour in 1885.

Little Island and the coast of Fitzwilliam Island for half a mile westward of it should not be approached nearer than 300 yards (274^m3).

North East Point, as the northeast extremity of Fitzwilliam Island is called, is distant three-quarters of a mile from Rattlesnake Point.

North East Point Reef, with 6 to 15 feet (1^m8 to 4^m6) of water over it, extends 300 yards (274^m3) on the northwest side, one-quarter of a mile north-eastward and 300 yards (274^m3) southeastward.

Wall Island lies with its low, narrow south extremity a little more than a mile northeastward from North East Point. It is over three-quarters of a mile long in a northeasterly and southwesterly direction with a greatest width of half a mile near its north end. Deep water skirts its north and east sides, except off the small bay about the middle of the east side.

From the south end of Wall Island, a reef, named **The Wall** on account of the steepness of its eastern side, extends southward nearly 1¼ miles. It is a very dangerous reef, having 7 feet (2^m1) of water (in low stages it may be nearly dry) near its southern end. A detached spot, of 3¼ fathoms (5^m8), lies one-third of a mile eastward from North East Point.

Clearing mark.—The east fall of the Cape Smith land in line with the east extreme of Rabbit Island, bearing 014°, leads half a mile eastward of The Wall.

On the west side of Wall Island are two small islets, separated from the main island by a distance of 200 yards (182^m9).

Chart 2296.

From these two islets, sunken rocks and shoal water extend a quarter of a mile, to form **West Flat** to pass northward of which keep the whole of Club Island open north of Wall Island, bearing 104° . North East Point (Fitzwilliam Island) touching any part of Flowerpot Island (when visible) leads westward of this shoal. 5

Wall Island Channel is the name given to the passage, with a depth of 4 to 5 fathoms (7^m3 to 9^m1), between The Wall and North East Point Reef. As no conspicuous natural objects present themselves in the direction of this channel, no single range can be given by which a vessel can be guided through. The best available mark, for a vessel taking this channel from the south, is, before passing northward of the high land near Rattlesnake Harbour, to bring Church Hill (James Bay, Manitoulin Island) over the western extreme of Wall Island (not the islets), bearing 002° . Keep this mark on until Little Island, near the entrance to Rattlesnake Harbour, comes in sight north of North East Point, bearing about 244° , when haul westward. The vessel's speed should be reduced and the lead kept going. 10 15

Pope Rock (Lat. $45^{\circ} 34' N.$, Long. $81^{\circ} 44' W.$), with 4 fathoms (7^m3) of water over it, forming the north end of a bank over a mile long within the depth of 10 fathoms (18^m3), is situated 2 miles westward from the north point of Wall Island. 20

Southeast coast of Fitzwilliam Island.—From North East Point this coast trend $4\frac{1}{2}$ miles in a southwesterly direction to McCarthy Point, and is steep-to.

The eastern edge of **McCarthy Point Ledge** runs from the point of that name in a general southwesterly direction $2\frac{1}{4}$ miles, where it terminates in a small rocky isolated patch, with 13 feet (4^m0) of water over it. To pass east of this danger, keep the east fall of Fitzwilliam Island near Rattlesnake Harbour in line with Pavement Point, bearing about 014° . 25

From a point $1\frac{3}{4}$ miles southwestward from **McCarthy Point**, being the southwest termination of McCarthy Reef, the coast trends $2\frac{3}{4}$ miles southwesterly to Indian Harbour Point, is clean and can be approached to within 300 yards (274^m3). 30

Fitzwilliam Channel is the name given to the passage between Fitzwilliam and Yeo Islands, the dangers in which have been described on page 77. 35

Directions for Fitzwilliam Channel.—The best passage through Fitzwilliam Channel is between Smith Rock and Yeo Island, by keeping **South Bluff** of Lonely Island in line with the northwest side of James Island, bearing 060° . This mark also leads northwest of Manitoba Ledge, but requires clear weather to discern Lonely Island. When the north end of Flowerpot Island appears northward of Yeo Island, bearing 133° , steer 049° midway between the south point of Club Island and the northeast extreme of Lonely Island. This course for nearly 3 miles will lead between James Island Reef and McCarthy Point Ledge, a description of which is given above. 40

A vessel may haul northward from this course, as soon as the east fall of Fitzwilliam Island (near Rattlesnake Harbour) appears in sight in line with Pavement Point, bearing about 014° ; when the north end of Bears Rump comes in line with the north point of James Island, she may keep eastward if required. 45

If proceeding into Lake Huron from Georgian Bay by this channel; from the intersection of the two ranges just mentioned (about a third of a mile northwest of James Island) steer 229° for $2\frac{1}{4}$ miles. This course ought to bring the west side of James Island in line with South Bluff of Lonely Island, and 50

Chart 2296.

at the same time, the north end of Flowerpot Island in line with the north extreme of Yeo Island. Proceed into Lake Huron with the former of these marks on.

- 5 **Owen Channel** is the name given to the passage into Georgian Bay from Lake Huron, between Manitoulin and Fitzwilliam Island, being in the narrowest part $1\frac{1}{4}$ miles wide from shore to shore. A description of the dangers found in the channel were given on pages 79 and 80.

- Directions for Owen Channel.**—In approaching this channel from the
10 western or northwestern parts of Lake Huron, bring the north fall of Fitzwilliam Island (near Rattlesnake Harbour) in line with the eastern part of Beach Point, bearing 079° . (*See view B on chart No. 2296.*) The range leads through North Passage (as the deep water between Ship Bank and Hungerford Point is called) as far as Beach Point, with 7 fathoms (12^m8) in North Passage, 5 fathoms (9^m1)
15 southward of Owen Island Bank, and across the Ridge with not less than 17 feet fathoms (5^m2).

If wishing to proceed along the southeast coast of Manitoulin Island, a vessel may haul northward off the leading mark, as soon as the southwest end of Perseverance Island is in line with Phoebe Point, bearing 208° .

- 20 **South Passage** of Owen Channel divides Stewart Rock from the shallow coast of Fitzwilliam Island, its least breadth being 350 yards (320^m0) and depth 4 fathoms (7^m3).

- To take this passage from Lake Huron, bring the south extreme of Wall Island trees in line with Beach Point of Fitzwilliam Island, bearing 062° . (*See*
25 *view C on chart No. 2296.*) Keep this range, crossing the bank extending southward from Stewart Rock, with 21 feet (6^m4) of water, until the southwest end of Perseverance Island is in line with Phoebe Point, bearing 208° . Keep the latter marks on to cross The Ridge as before directed.

- In approaching the entrance to Owen Channel from the southwest, the
30 southwest extreme of Perseverance Island should not be brought to bear southward of 149° until (if wishing to take South Passage) the mark for that channel comes on. Or, if preferring North Passage, until the west side of Owen Island is slightly open to the southeastward of the Manitoulin shore, bearing about 048° . This range should be kept to lead westward of Ship Bank, until the regular
35 North Passage leading mark comes on.

Buoy.—A spar buoy, painted in black and white vertical stripes, is moored $2\frac{1}{4}$ miles, 248° from the south extreme of Owen Island. It is about on the line of the leading marks for the North Passage of Owen Channel. (*For directions for Owen Channel, see above.*)

- 40 In thick weather, the southwest side of Fitzwilliam Island should not be approached to a less depth than 20 fathoms (36^m6).

- Club Island** is over $1\frac{3}{4}$ miles long in a north and south direction, with a maximum breadth of over three-quarters of a mile. The northwest, north, and east sides are fairly steep-to but from **South Point, Club Island Ledge** extends
45 in a general southwesterly direction, nearly a mile, at which distance there is a depth of 3 fathoms (5^m5).

Clearing marks.—To pass eastward of this ledge, keep the point of Club Island (north of the harbour) well open east of South Point, bearing 011° .

- The east extreme of Rabbit Island in line with the same side of Erie Shingle,
50 bearing 347° , leads west. The south end of **White Cliff** (Manitoulin Island) in line with North East Point of Fitzwilliam Island, bearing 283° , leads nearly $1\frac{1}{4}$ miles south of Club Island Ledge.

Chart 2296.

From South Point of Club Island the stony western coast trends in a north-westerly direction, nearly $1\frac{1}{4}$ miles to **Back Cove** (a shallow indentation into which a boat could carry 6 feet (1^m8) of water in 1885). From this western coast of Club Island, shoal water extends an average distance of a little over one-third of a mile. From Back Cove, the coast trends northeastward a little over one mile to its northeast extremity, and is steep-to. 5

Club Harbour (Lat. $45^{\circ} 34' N.$, Long. $81^{\circ} 36' W.$), on the east side of the island, contains excellent though limited anchorage in $3\frac{1}{2}$ fathoms (6^m4). The entrance is obstructed by two rocky ledges, known as North Reef and South Spit, between which, in 1885, 15 feet (4^m6) was carried in. (At low stages there may be 6 feet (1^m8 less.) There are several fishermen's huts in the harbour. (See plan Chart 2296.) 10

North Reef, with depths varying from 4 to 9 feet, (1^m2 to 2^m7) extends 250 yards (228^m5) from the north side of the entrance. 15

South Spit, with the same depth, makes off 100 yards (91^m4) from the northeast part of **Fishery Point** (as the south entrance point is called). The western gravelly part of this point is steep-to close to the dry stones, and 12 feet (3^m7) of water was available in 1885 at a radius of 230 yards (210^m2) from this gravelly point right round to North Reef. At a greater distance, the water rapidly shoals to the shores. The anchorage under Fishery Point is confined to a space of about 6 acres. Two large stone piles on this point mark the site of a steel tower that formerly stood there. 20

Beacons.—Two crosses, about 6 feet (1^m8) high, which serve as leading beacons, stand on the west shore of the harbour, and in line, lead into it. 25

Erie Shingle is the name of a narrow bank of small stones, 7 feet (2^m1) high, 300 yards (247^m3) in length in a northwest direction. The northeast side is steep-to, but shoal water extends in every other direction. Westward, it makes out a little more than one-third of a mile, where there is not more than 12 feet (3^m7). Half a mile southward, there is but 15 feet, (4^m6), with 5 feet (1^m5) a quarter of a mile northeast of it. 30

A detached patch, with 16 feet (4^m9) on it, lies a little more than a mile southwest from Erie Shingle.

Clearing marks.—To pass westward of Erie Bank, keep Church Hill (James Bay) open westward of Rabbit Island half the breadth of the latter, bearing 349° . The south end of Owen Island (Manitoulin), touching the northwest side of Wall Island, bearing 245° , leads a quarter of a mile northwest of it. Lonely Island lighthouse well open north of Club Island, the north point of the latter bearing 093° , leads north, but close to the shoal water. 35

Erie Channel is the passage between Club Island and Erie Shingle. Between the shoals on either side it is half a mile wide, with a depth of $3\frac{1}{2}$ fathoms (6^m4), which will be found when Lonely Island lighthouse is seen over Back Cove of Club Island. On account of no conspicuous natural objects offering themselves in the direction of this channel suitable for a leading mark, it cannot be recommended to strangers. 45

Rabbit Island, situated $4\frac{1}{2}$ miles southward from the entrance to James Bay, may be approached on its northwest, north, and east sides, to 100 yards (91^m4); from the southwest low coast **Rabbit Island Bank** extends to the southwestward, with a depth of 7 to 9 feet (2^m1 to 3^m7), at half a mile from the west point of the island, and the same depth a quarter of a mile south of the southeast extreme. 50

Chart 2296.

A patch, with 15 feet (4^m6) over it, is situated a mile southwest from the west extremity of Rabbit Island. Another spot, with 3½ fathoms (6^m4) on it, lies about half a mile west of the 15-foot (4^m6), patch. The 5-fathom line 5 (9^m1), westward of which the bank is steep-to, is 2 miles southwestward of the west point of Rabbit Island.

Clearing marks.—South Point of Club Island open south of Erie Shingle, bearing 140°, crosses Rabbit Island Bank southwestward of the patches with 4 fathoms (7^m3). North East Point of Fitzwilliam Island in line with the very 10 west extreme of Wall Island, bearing 188°, leads westward of these shoals, with 4¼ fathoms (7^m6).

Hungerford Point, the most southerly extreme of Manitoulin Island, may be known by its small white stony beaches. Scattered stones and shallow water extend from this point and from the shore westward of it a distance of a 15 quarter of a mile, leaving a fairly steep shore between Hungerford Point and Owen Island Bank for one-third of a mile.

The southeast coast of Manitoulin Island trends northeasterly 2½ miles from Hungerford Point to the northeast extremity of Owen Island Bank described on page 79, then one mile northeastward, to **Little Bluff**, where it is 20 steep-to. From Little Bluff, it continues its course northeastward 5 miles to **Red Cliff Bight** (so called from a small, low earth cliff of that colour), and for the first 3½ miles is steep-to. Thence across the bight above the mentioned, to the southwest part of **Tamarack Point**, the coast is foul.

Tamarack Cove runs in north of the latter point half a mile, but as there is 25 only a depth of 6 to 7 feet (1^m8 to 2^m1) of water, and that over a rocky bottom, it is only fit for boats. From the southwest part of Tamarack Point, the coast is again steep-to for a little over 2 miles as far as the south point of **Shallow Cove**, from the north point of which a shoal extends southward one-third of a mile. From the north point of Shallow Cove, the coast continues foul to the 30 extent of 300 yards (274^m3), as far as the last of these indentations known as **North Cove**. Hence, to within 1¼ miles of the turn into James Bay, the straight shore may be approached to 200 yards (182^m9).

Horsburgh Point is the southern entrance point of James Bay; the point has good water on the northeast side, but from the east side for 1¼ miles south- 35 ward of the turn into James Bay shoal water extends a distance of 300 yards (274^m3).

James Bay is a wide open indentation with a sandy beach three-quarters of a mile broad; the shore of the bay is shallow, not more than 12 feet (3^m7) being found at a quarter of a mile therefrom. On the northern side of the bay is 40 situated the Indian village of **Wekwemikongsing**. The church stands upon the rising ground half a mile back from the village, and is conspicuous from the bay.

Northwestward, three-quarters of a mile from the church, is **Church Hill**, 300 feet (91^m 4) high, rendered conspicuous by its steep fall to the northeast 45 and long slope in the opposite direction.

From the eastern part of the point separating the two portions of the settlement, a shoal, with 9 feet (2^m7) on it, makes off in a southeasterly direction, 300 yards (274^m3), to avoid which keep South Point of Squaw Island open to the Manitoulin shore, bearing 048°. A vessel may find a berth with south- 50 west and northwest winds, in 4 fathoms (7^m3) over sand, in the middle of James

Chart 2296.

Bay, with Lonely Island lighthouse a little open of Horsburgh Point, and South Point of Squaw Island touching the Manitoulin shore. The bight northeastward of the houses is foul, and from the northeast point of this bight the coastline is unbroken for $2\frac{1}{4}$ miles to the south low Clay Cliff, and may be approached to 200 yards (182^m9). 5

Clay Cliff is a remarkable bank of white clay and gravel, 250 feet (76^m2) in height, in which, with the lower cliffs of the same character on either side of it, presents a conspicuous object to the mariner.

From these cliffs, shoal water extends for a distance of a quarter of a mile, and so continues for 3 miles, until one-third of a mile from an isolated patch of dry stones known as **The Nest**. Hence, to the northeast extreme of Cape Smith the shore may be approached to 200 yards (182^m9). 10

(For Cape Smith, see Chapter IX, page 248)

Halfmoon Island (Lat. $45^{\circ} 26' N.$, Long. $81^{\circ} 28' W.$), is situated $7\frac{2}{3}$ miles south of Lonely Island and $15\frac{1}{2}$ miles 327° from Cabot Head light. It is 12 feet (3^m7) high, is 650 yards (594^m3) long in a northwest and southeast direction, and about 100 yards (91^m4) broad. It is composed of small stones, over which grow, in two clumps, a few small trees. The north and east sides may be approached to 200 yards (182^m9), but from the southeast and west points (the horns of the halfmoon) and the shore embraced by them, there spreads out southwestward for a distance of $2\frac{1}{2}$ miles a large area of shallow water with depths under 10 fathoms (18^m3), known as **Halfmoon Bank**. 15 20

West Ledge, composed principally of stones nearly awash (1885), extends westward nearly half a mile from the western horn. 25

South Ledge is the name given to the dangerously narrow shoal portion extending southward over half a mile from the southeastern horn of the island, with 10 feet (3^m7) at its southern extremity. A depth of 3 fathoms (5^m5) is found at two-thirds of a mile southwest from the same horn of the island.

The 3-fathom (5^m5) line trends northwesterly between the extremes of the two ledges. 30

Light.—A *flashing white* light is exhibited at an elevation of 39 feet (11^m9), from a steel tower with white daymark, on the southern end of Halfmoon Island.

Clearing mark.—The west side of Lonely Island open east of Halfmoon Island, bearing 353° , leads eastward of South Ledge. 35

In thick weather or at night, approaching from the southwest, the gradual decrease of the soundings will give a good warning of the approach of these ledges, but from the southeast, round eastward to the northwest, a vessel should not shoal to less than 40 fathoms (73^m2), that depth being found at a little over half a mile from the ledges. 40

Lonely Island is almost circular in shape, with its greatest diameter nearly 2 miles. It lies in a direct line between Cabot Head and Cape Smith; the east extreme of the island, bearing 340° , from Cabot Head, and 160° from Cape Smith. The distance between Cabot Head and Lonely Island lighthouse is 24 (21 nautical) miles; that between Lonely Island lighthouse and the northeast extremity of Cape Smith being $16\frac{2}{3}$ ($14\frac{1}{2}$ nautical) miles. 45

Chart 2296.

Lights—Fog signal.—A group flashing light, showing three flashes every 8 seconds, at an elevation of 195 feet (59^m4), is exhibited from a white octagonal tower near the northern end of Lonely Island. The light is obscured from 327°
5 through North to 046°.

A fog gun fires once every minute.

A flashing green light is exhibited at an elevation of 16 feet (4^m9), from the southwest side of Lonely Island.

Note.—Ice conditions may necessitate these lights being extinguished earlier
10 in the autumn than the other lights in Georgian Bay.

Short banks extend from the north and northeast, southeast, and west sides of the island, there not being more than 18 feet (5^m5) at a quarter of a mile distant. The light in the south coast is shoal to the line of its points. The remainder of the island should not be approached nearer than 300 yards (274^m3).

Northeast Shingle is the name given to a narrow bank, the shoalest part of which, half a mile long in a northeasterly direction, is composed of boulders, on which there was in 1885 from 2 to 5 feet (0^m6 to 1^m5) of water. This northern portion bears from Lonely Island lighthouse, 043° distant a little over 4½ miles. These boulders must have been a few feet above the water in 1822, as Lieutenant Bayfield, R.N., in that year observed on it for variation of the compass.
20 In July, 1914, the two patches, indicated by crosses on the chart, were out of water, the northeastern and larger patch to the extent of 3 to 4 feet (0^m9 to 1^m2).

In addition to this very shallow part, dangerously shoal water extends from it in northeasterly and southwesterly directions, three-quarters and 1½ miles,
25 respectively, making the total length of the shoal 2¼ miles. The southerly extreme, with a depth of 12 feet (3^m7) in 1885, bears 053° distant 3¾ miles from Lonely Island lighthouse.

Northeast Shingle is connected with Lonely Island by a bank, with depths on it varying from 6 to 8 fathoms (11^m0 to 14^m6). The summit of Fitzwilliam
30 Island in line with the northwest extremity of Lonely Island, bearing 250°, leads two-thirds of a mile southward of Northeast Shingle. The southeast visible extreme of Fitzwilliam Island, touching the northwest point of Lonely Island, bearing 240°, leads on the southeast edge of it, with 5 fathoms (9^m1). The northwest side of Fitzwilliam Island, in line with the same side of Club Island
35 bearing 245°, leads northwestward of this shoal.

Buoy.—A red conical buoy, equipped with radar reflectors, marks the southwest extremity of Northeast Shingle. It is moored in 5 fathoms (9^m1), and bears about 056°, distant 3¼ miles from Lonely Island light.

In thick weather a vessel should not approach the southeast and west sides
40 of Northeast Shingle to a less depth than 20 fathoms (36^m6). On the north and east sides, she may shoal to 10 fathoms (18^m3).

Grand Bank is the name given to an extensive plateau, with a mixed character of bottom, having less than 20 fathoms (36^m6) of water upon it, spreading out from Lonely Island in a general northeasterly direction to the north shore of
45 Georgian Bay.

Dawson Rock (Lat. 45° 38' N., Long. 81° 16' W.).—Although not quite so shallow as the last mentioned danger, there being 4 feet (1^m2) of water upon the rock (1884), yet from its greater distance from the nearest island, and lying nearly in the direct course from the southeastern ports of Georgian Bay to North
50 Channel, as well as being in the track from Tobermory to French River, it becomes one of the most formidable dangers in the navigation of the bay.

Chart 2296.

The whole patch of boulders and rock, under the depth of 21 feet (6^m1), is pear-shaped, with the stalk to the north, and is over one mile in length and nearly a mile broad. The shoalest water is on the eastern side of the patch, varying from 4 feet (1^m2) (in 1884) on the southern part, to 10 feet (3^m0) on the northern extremity. The latter bears 063° and is distant 11 ($9\frac{2}{3}$ nautical) miles from Lonely Island lighthouse. The southern extremity of the shoal is half a mile nearer Lonely Island. 5

The north end also bears 147° , distant $16\frac{1}{2}$ ($14\frac{1}{3}$ nautical) miles, from Young Squaw (the name given to the little islet situated half a mile northeastward from the entrance to Squaw Island Harbour, page 268). 10

The soundings give very little indication of the approach to the east side of Dawson Rock, there being 18 fathoms (32^m9), $1\frac{1}{2}$ miles, and nearly the same water, a quarter of a mile from the depth of 9 feet (2^m7). On the southeast side, 20 fathoms (36^m6) will be found three-quarters of a mile from the rock; on the southwest, 10 fathoms (18^m3) at $1\frac{1}{4}$ miles; whereas northwest of the rock, the latter depth will be found one-third of a mile distant. 15

Buoy.—A black spar buoy is moored near the north end of Dawson Rock.

North and northwestward of Dawson Rock, there are five rocky patches with $4\frac{1}{2}$ to $5\frac{1}{2}$ fathoms (8^m2 to 10^m1) over them, which, in a heavy southeast sea it might be well to avoid, more particularly as fishermen have reported, since the survey was made, as little as 18 feet (5^m5) in this locality, possible on Riley Patch. 20

Tranch Rock, the southwesternmost of these patches has $4\frac{1}{2}$ fathoms (8^m2) on it, and lies $3\frac{3}{4}$ miles, 294° , from the north extreme of Dawson Rock. 25

Ben Back Shoal, with $4\frac{1}{2}$ fathoms (8^m2), lies 326° , $3\frac{1}{2}$ miles from the same.

Riley Patch, with the same depth on it, lies on the same bearing, distant $4\frac{1}{2}$ miles from the north extreme of Dawson Rock.

Milligan Rock, with $5\frac{1}{2}$ fathoms (10^m1), is situated 348° , distant, $2\frac{3}{4}$ miles, from the same. 30

McNeil Ledge, with 5 fathoms (9^m1) over it, bears 010° , distant 5 miles from the north extreme of Dawson Rock.

(For Squaw, Gull, and other islands north, see Chapter IX, page 248.)

CHAPTER V

CABOT HEAD TO CHRISTIAN ISLAND

DATUM.—See page 1.

(For description of Cabot Head and coast westward of it, see Chapter IV, 5 page 63).

Chart 2282.

Cape Chin (Lat. $45^{\circ} 07' N.$, Long. $81^{\circ} 17' W.$), a steep bluff 147 feet (44^m8) high, with scattered burnt trees upon it, is distant nearly $8\frac{2}{3}$ ($7\frac{1}{2}$ nautical) miles southward from Cabot Head lighthouse. The bight between these headlands
10 is known as **Dyer Bay**, in which the water is very deep, there being over 70 fathoms (128^m0) at a mile from the shore. On account of the proximity of the deep water to the coast, a vessel has to be inconveniently close to the shore when anchored for shelter in westerly gales.

Anchorage in Dyer Bay.—The best place to anchor is $4\frac{1}{2}$ miles southwest-
15 ward of the lighthouse at Cabot Head, and about a quarter of a mile southward of a low earth cliff, in a depth of 7 fathoms (12^m8) over sand. Here a vessel will find most room to get under way with an east wind, and will have shelter between bearings 160° (through west) to 330° .

A small stream from **Gillies Lake**, situated on higher land at the back,
20 flows into the bay, about 3 miles southwestward of Cabot Head lighthouse. The shores of Dyer Bay are surmounted by a limestone cliff, which near Cabot Head attains an elevation of 235 feet (71^m6). At Cape Chin itself, the water is not dangerously shoal outside the distance of 150 yards (137^m2).

Wharf.—At Dyer Bay village is a Government wharf 239 feet (72^m8)
25 long, at the outer end of which is a berth for boats drawing up to 11 feet (3^m4) of water; it affords no shelter with onshore winds.

Darling Reef is a narrow ridge of rock and boulders a quarter of a mile long in a northeast and southwest direction. The shoalest spot with a depth of 17 feet (5^m2) (at low stages there may be $4\frac{1}{2}$ feet (1^m4) less) on it, bears 055° ,
30 and is distant $2\frac{3}{4}$ miles from Cape Chin, the nearest land. A bank, with less than 10 fathoms (18^m3) on it, extends $1\frac{1}{4}$ miles northeastward from the reef, but on the southwest side the water is very deep, there being nearly 60 fathoms (109^m7) at 300 yards (274^m3).

Eight Fathom Patch, with that depth on it, lies 093° , distant 5 miles
35 from Cape Chin, being separated from Darling Reef by a lane of water $3\frac{1}{2}$ miles wide, 50 to 60 fathoms (91^m4 to 109^m7) deep.

From Cape Chin, the shore trends southeasterly 3 miles to a bluff somewhat similar in character to Cape Chin, known as **Smoky Head**. This headland is 172 feet (52^m4) in height, and the water is steep-to from Cape Chin to this
40 head.

White Bluff, 175 feet (53^m3) high, is so called from the bleached appearance of its limestone cliff; it is situated 3 miles southward of Smoky Head, and about the same distance northwestward from the village of Lionhead. The shore between White Bluff and Smoky Head may be approached as near as 100 yards
45 (91^m4). A depth of 50 fathoms (91^m4) will be found a quarter of a mile from White Bluff.

Chart 2282.

Whip-poor-will Bay is the name given to the indentation between White Bluff and the village of Lionhead, and contains shelter from westerly gales. A vessel might lie here with the wind as far round as north, protected by the high land of White Bluff; the great drawback is the depth of water, 14 fathoms (25^m6) being the least a vessel could anchor in to ensure swinging clear of the shore. 5

The village of **Lionhead** is situated at the head of **Lionhead Harbour**; it had, in 1951, a population of 344 and contains several churches, the most conspicuous of which from seawards is the Episcopal Church. It has daily 10 connection by motor road with Wiarton.

Harbour facilities.—The harbour is about a quarter of a mile square, with general depths of 5 to 20 feet (1^m5 to 6^m1), protected from northerly storms by a breakwater-wharf extending southeasterly from the shore about 450 feet (137^m2) and thence easterly 200 feet (61^m0). Beyond this a submerged portion 15 of the old breakwater extends 50 feet (15^m2) and care should be used in approaching. There is accommodation for small craft, near the inner end of the breakwater, where there are three landing piers, each 60 feet (18^m3) long, for the accommodation of tourists and fishermen. The depth alongside the most westerly one is 15 feet (4^m6). From a point on shore, 150 feet (45^m7) west- 20 ward of the inner end of the breakwater, a timber pile trestle wharf extends southeastward 291 feet (88^m7), forming a sheltered basin between it and the breakwater. The depth in this protected area is about 16 feet (4^m9).

Light.—A *fixed green* light is shown at a height of 27 feet (8^m2), visible 12 (10 nautical) miles, from the outer end of the breakwater at Lionhead Har- 25 bour.

Buoy.—A red spar buoy marks the extremity of the destroyed portion of the old breakwater.

From the village the east shore runs northeast, straight and steep-to, for 2 miles to a headland, 168 feet (51^m2) high, called by the same name as the village. 30 From the eastern part of **Lionhead**, a reef makes out a quarter of a mile, and as the bottom is very rough care should be taken to avoid it.

Gun Point (*Lat.* 45° 00' N., *Long.* 81° 12' W.), is 1½ miles southeastward from the last mentioned headland; the shore between should receive a berth of 300 yards (274^m3). Gun Point is a steep cliffy headland, 181 feet (55^m2) in 35 height, and has deep water close to it.

Jackson Shoal, under the depth of 30 feet (9^m1), is an extensive patch 1½ miles long in a northeasterly and southwesterly direction, and one mile broad. Its shoalest spot, with 4 feet (1^m2) of water on it, bears 014° distant 2½ miles from Gun Point and 048°, distant 2½ miles from Lionhead. It is connected to 40 both these headlands by a bank, on which there are depths of 6 to 9 fathoms (11^m0 to 16^m5) over rocky bottom.

Buoys.—A black spar buoy, marks the northern edge of the shoal. It bears 010° and is distant nearly 3 miles from the northeast extremity of Gun Point. 45

A red spar buoy is moored immediately southward of the southern edge of the 18-fathom (32^m9) contour of the shoal, but two-thirds of a mile north-eastward from the most southerly 5-fathom (9^m1) line. It bears 015° and is distant 2 miles from the northeast extremity of Gun Point.

Chart 2282.

Clearing marks.—To pass northeastward of this shoal keep Capes Paulett and Dundas in line, bearing 154° .

To pass in 5 fathoms (9^m1) over the southwestern end of the shoal, keep
5 Kings Point Bluff shut in behind Cape Dundas, bearing 138° .

Coast.—From Gun Point, the coast turns abruptly southwestward, surmounted by a limestone cliff and with good water close to it forming the northwest shore of **Barrow Bay**. At $2\frac{1}{3}$ miles from Gun Point, it alters its character to that of a beach which trends southward for three-quarters of a mile to the
10 mill.

Cape Dundas is the southeast point of Barrow Bay being distant from the mill $4\frac{3}{4}$ miles. The cape is surmounted by a bluff, about 300 feet (91^m4) high, covered with thick timber, offering a contrast to the burnt country between it and Cabot Head.

15 Cape Dundas itself, and the coast west of it for 3 miles, should receive a berth of a quarter of a mile; the remaining shore of the bay may be approached to 200 yards (182^m9). From Cape Dundas, the shore runs southward $1\frac{1}{2}$ miles to the east point of Jackson Cove and is fairly steep-to.

In **Jackson Cove** and close under its east point, will be found shelter
20 from all winds, the only drawback being the great depth of water. A vessel in order to swing clear of the shore has to anchor in 13 fathoms (23^m8) over muddy bottom. A stranger, having to seek shelter from a northerly gale, will find it easier to make and anchor under this point, than to find his way to MacGregor Harbour (*see page 91*).

25 **Hope Bay**, a little over one mile wide, is contained between the east point of Jackson Cove and Cape Paulett, running in southwesterly from the line of these headlands a little over 3 miles. There is excellent anchorage at the head of Hope Bay. One mile in from the point of Jackson Cove is a somewhat
30 similar projection sheltering a small, shallow bay, named **Shoal Cove**. This flat does not however interfere with the general navigation of the bay, the shores of which, with the exception of the head, may be approached to 200 yards (182^m9). At the head the flat makes out a quarter of a mile, at which distance there is a depth of 18 feet (5^m5).

Cape Paulett has somewhat the same character as Cape Dundas, but is
35 about 100 feet (30^m5) higher; this broad headland divides Hope and Sydney Bays, and is fringed with shoal water for a distance of 250 yards (228^m5).

Sydney Bay is contained between the last mentioned headland and the low point known as Prairie Point on the east. The west and south shores of the bay are flat, shoal water extending, from abreast the Indian village, a little over a
40 quarter of a mile. Outside this bank, however, and in the western portion of the bay under Cape Paulett there is good anchorage and shelter in 4 or 5 fathoms (7^m3 or 9^m1) muddy bottom.

Prairie Point, already mentioned, has the name which the Indians generally apply to a broad, flat, bare and low point of this character. It separates the
45 last mentioned bay from MacGregor Harbour, and has a rocky bank making off its west side a quarter of a mile.

Chart 2282.

The westernmost of three remarkable limestone cliffs and known as **Jones Bluff**, 376 feet (114^m6) in height, follows the southeast shore of Sydney Bay at a distance of a quarter of a mile, the road to Wiarton running between the cliff and the shore.

MacGregor Harbour, is the easternmost of the three arms of the large bay contained between Capes Dundas and Croker, called by Admiral Bayfield, **Melville Sound**. Although considerably smaller than either Hope or Sydney Bays—the other two arms—it is an excellent little harbour affording shelter from all winds under the northwestern narrow point called **Harbour Point**, in 3 10 fathoms (5^m5) muddy bottom. (*see plan chart 2282*).

The land from Hope Bay across to Colpoys Bay and out to Cape Croker comprises the Indian reserve.

Near the shore of the harbour is situated the Indian village of Cape Croker. The village contains United and Roman Catholic Churches situated near the middle of the neck, separating the harbour from the water, on the southeast side of Cape Croker. A good road connects the village with Wiarton, the nearest railway telegraph town. 15

There is a wharf in ruins in the northern part of the harbour. A sandbank stretches out 300 yards (274^m3) from the shore close westward of Harbour Point, there being only 6 feet (1^m8) of water at that distance off the little boat harbour situated 350 yards (320^m0) westward of this point. A fringe of shallow water also follows the coast round at an average distance of 200 yards (182^m9). Before giving directions for MacGregor Harbour, the coast of the peninsula as far as Montresor Point as well as Barrier Island will be first described. 20 25

Pine Tree Point is the most westerly part of the Cape Croker Peninsula, being 1 $\frac{3}{4}$ miles from MacGregor Harbour, and 2 $\frac{1}{4}$ miles from the Montresor Point. There is nothing remarkable in the appearance of Pine Tree Point, but it is important because of a rocky bank, called **Lamorandiere Bank**, extending nearly half a mile in a westerly, and three-quarters of a mile in a southwesterly direction. The shoalest part, with less than 6 feet (1^m8) on it, lies westerly, a quarter of a mile from Pine Tree Point. This bank is the worst obstruction in approaching MacGregor Harbour, but may be passed to the westward by keeping the cottages on the cliff in Hope Bay just shut in behind the cliff itself, but this mark is not easy for a stranger to discern. To pass southward of this bank, keep Gun Point and Cape Dundas in line, bearing 307°. 30 35

Montresor Point (*Lat. 44° 58' N., Long. 81° 02' W.*) is the name given to the northern part of that portion of the peninsula, separated from the eastern and higher portion by a broad valley, running from Cove of Cork Bay to MacGregor Harbour. The point is composed of a light-coloured earth cliff 86 feet (26^m2) high, and from the shore 200 yards (182^m9) eastward of this cliff, a shallow rocky flat extends a quarter of a mile. The shore between Pine Tree and Montresor Points may be approached to 200 yards (182^m9). 40

Barrier Island is low and wooded, and two-thirds of a mile long in a north and south direction, with an average breadth of 200 yards (182^m9). Its eastern side may be approached to 200 yards (182^m9), but its other sides are foul, the northern and western coasts being shallow for distances of over a third to one-half mile, while from the south point a narrow rocky spit makes out in a southerly direction, rather more than a quarter of a mile, to clear which, keep Cape Croker closed with Montresor Point, bearing 082°. 45 50

Chart 2282.

Directions for MacGregor Harbour.—If west of Barrier Island, keep midway between the latter and Cape Dundas, steering toward Cape Paulett to bring Gun Point and Cape Dundas in line, bearing 307° . Keep this mark on
 5 astern, until within three-quarters of a mile from the harbour, when keep rather nearer to the south shore and proceed in. Harbour Point may be rounded close to, and the anchor let go under that point in 16 to 18 feet (4^m9 to 5^m5).

If passing east of Barrier Island, the latter may be approached as near as the line of Kings Point Bluff touching Pine Tree Point, bearing 162° . When Cape
 10 Croker touches Montresor Point, bearing 082° , steer toward Hope Bay to avoid Lamorandiere Bank, until Gun Point is in line with Cape Dundas, bearing 307° , when proceed as before directed. If from the east, give Montresor Point a berth of half a mile and steer for the head of Hope Bay, keeping the cliff cottage mark on, if visible, and when Gun Point and Cape Dundas are in line, bearing
 15 307° , keep them so astern as before directed.

Cape Croker, a prominent and conspicuous headland is $27\frac{1}{2}$ (24 nautical) miles from the town of Owen Sound and 25 (22 nautical) miles from Cabot Head. The eastern part of the headland is 160 feet (48^m8) high, but the most
 20 northerly part of the promontory is low. The shore of the latter, as well as the higher portion of the cape just alluded to, should receive a berth of a quarter of a mile.

Light.—Fog signal.—A *group flashing white* light, showing 2 flashes every 5 seconds is exhibited, at an elevation of 67 feet (20^m4), from an octagonal, concrete tower, surmounted by a red lantern, on the easternmost part of Cape
 25 Croker.

A fog diaphone sounds *one blast* every 60 seconds.

Coast.—Between the most northerly part of Cape Croker and Montresor Point, already alluded to, is a large open bight called **Cove of Cork Bay**, so named from a small boat harbour near the east entrance point of the bay, called
 30 by the fisherman Cove of Cork. The head of the bay is shoal for a quarter of a mile.

Surprise Shoal is one of the worst dangers in Georgian Bay, lying nearly in the direct track from Cabot Head to Cape Croker, Wiarton, Owen Sound, and Collingwood. It consists of a rocky bank, which under the depth of 10
 35 fathoms (18^m3) is over a mile long in an east and west direction, by half that distance in breadth. It has on it three distinct shallow spots, the western one with 9 feet (2^m7) on it (at low stages there may be $4\frac{1}{2}$ feet (1^m1) less) being the shoalest, and bearing from Cape Croker lighthouse 335° , distant $7\frac{1}{2}$ ($6\frac{1}{2}$ nautical) miles. From this shoalest spot, two other shoal heads, with 11 and 16 feet (3^m4
 40 and 4^m9) on them lie, respectively, eastward three-quarters of a mile and north-east one-third of a mile. From the 9-foot (2^m7) rock, the lighthouse on Griffith Island is open its own height northeastward of Cape Croker lighthouse, bearing 155° .

At night, therefore, when the lights are seen in this position, a vessel will be
 45 in danger of striking Surprise Shoal.

Light-and-bell-buoy.—A black light-and-bell-buoy, showing a *flashing white* light, is moored about 300 yards (274^m3) northwestward of the 9-foot (2^m7) shoal on Surprise Shoal.

Chart 2282.

Clearing marks.—In clear weather and daylight, a vessel will pass three-quarters of a mile outside or eastward of the shoal by keeping the whole of Griffith Island open eastward of Cape Croker bearing 169° , while to pass inside it, the island (and at night Griffith Island light) should be shut in by the cape bearing 154° . A vessel will be southeast of the Surprise Shoal, when the south-east steep fall of Cape Dundas is in line with the northwest extremity of Barrier Island, bearing 218° . The fall of Kings Point Bluff in line with the east edge of the clump of trees, at the back of Montresor Point, bearing 176° , leads west. The course and distance from three-quarters of a mile abreast of Cabot Head lighthouse to one-third of a mile abreast of Cape Croker lighthouse is 141° , 25 (22 nautical) miles (*see below*), passing one mile inside or southwest of Surprise Shoal. In clear weather, it is recommended to pass inside the danger both by day and night.

Passing Cabot Head lighthouse at the distance of a quarter of a mile, a 144° course for $19\frac{1}{2}$ (17 nautical) miles, should lead a vessel to a position midway between Surprise Shoal and Barrier Island, distant from each about 3 miles, and if the weather is clear, Cape Croker light should be discernible a little on the port bow distant 6 miles.

Griffith Island light should be visible from a height of 30 feet (9^m1), at a distance of 19 ($16\frac{1}{2}$ nautical) miles, or 3 miles northwestward of Surprise Shoal; if, therefore, Griffith Island light is visible, the vessel must be northward of her intended inside track and in danger of passing over Surprise Shoal.

From Cape Croker (*Lat. $44^{\circ} 58' N.$, Long. $80^{\circ} 59' W.$*) to Cabot Head, a direct course of 319° may be shaped. This course, giving Cape Croker lighthouse a berth of quarter of a mile, should lead $1\frac{1}{2}$ miles southwestward of Surprise Shoal, and when the vessel is abreast of the low north extremity of the cape, the light on Griffith Island should show signs of closing behind the high northeast extremity of Cape Croker, and, as before stated, as long as the light remains obscured by the cape a vessel will be southward of Surprise Shoal. The 20-fathom (36^m6) line encircles Surprise Shoal at a distance of a third of a mile, while on the south side there is as much as 10 fathoms (18^m3), 100 yards (91^m4) from 9-foot (2^m7) and 11-foot (3^m4) patches.

A depth of 32 and 40 fathoms (58^m5 and 73^m2) over a mixed bottom of sand, gravel, and reddish clay, will be found between the shoal and Montresor Point, the western portion of Cape Croker Peninsula, and a vessel uncertain of her position in thick weather or at night by not shoaling to less than 50 fathoms (91^m4), will keep at a safe distance from Surprise Shoal.

Coast.—From Cape Croker lighthouse, the shore turns away southward for over three-quarters of a mile, and then in a general southwest direction for $4\frac{1}{4}$ miles to the Indian village situated round the shore of a bay a mile northwestward of Kings Point. Opposite the village and north of Kings Point, shallow water extends nearly one-third of a mile and excepting Port Elgin Shoal, the coast is otherwise steep-to.

Wharf.—On the east side of Cape Croker, and opposite MacGregor Bay, is a Government wharf, that affords protection to a small basin for small boats; along the face, 80 feet (24^m4) in length, is a depth of 15 feet (4^m6).

Port Elgin Shoal commences at a point about one mile southward of the above wharf, and runs in that direction as a narrow ridge for one-half mile, its extremity being one-third of a mile off the shore.

Anchorage.—On the southeast side of Cape Croker, there is good holding ground and shelter from winds between south and north, through west, in 7 and 8 fathoms (12^m8 and 14^m6) of water, 300 yards (274^m3) from the shore,

Chart 2282.

with the whole of Griffith Island open a little east of Hay Island; but still better shelter can be had, in 4 to 6 fathoms (7^m3 to 11^m0), off the road leading across to MacGregor Harbour. The shortest distance across the neck at a third of
 5 a mile southward of the road is half a mile.

Kings Point, broad and not very high, is $5\frac{1}{4}$ miles southwestward from the east side of Cape Croker, and may be said to form the northwest entrance to Colpoys Bay, from the head of which it is distant 11 miles.

Kings Point Bluff, 371 feet (113^m1) high, and very conspicuous from
 10 the offing, is a well defined limestone cliff, a mile in from the point of that name, and with **Jones Bluff**, $1\frac{1}{2}$ miles northwest of it, already alluded to, together with **Malcolm Bluff**, 388 feet (118^m3) high, the same distance southward of it, make three of the most conspicuous landmarks on this part of the shore.

Colpoys Bay is a magnificent inlet running in $9 (7\frac{3}{4})$ nautical miles from the
 15 southwest extremity of White Cloud Island, which, together with Hay Island, shelters it from the heavier seas of Georgian Bay. The breadth of the mouth of the bay is 3 miles, and that of the head, at the town of Wiarton, three-quarters of a mile. It is a fine sheet of water, and with the exception of a sandy flat extending half a mile from the head of the bay, and a bank near the village
 20 of Oxenden making out 300 yards (274^m3), its shores may be approached everywhere to a distance of 200 yards (182^m9), and in some places closer.

The shores are marked by picturesque limestone cliffs, 300 feet (91^m4) high at the entrance to the bay, gradually lessening in height as the town of Wiarton is approached.

Anchorage.—There is excellent anchorage in any depth under 10 fathoms (18^m3) from abreast the village of Colpoys to the head of the bay, a space of $1\frac{3}{4}$ miles in length by over a mile in average breadth.

Warton.—This town is prettily situated round the head of Colpoys Bay. It had, in 1951, a population of 1,867, and contains churches of all denominations,
 30 a bank, and telegraph office, and is the present terminus of the Wiarton branch of the Canadian National Railway. There are two hotels.

Harbour.—The harbour consists of a dredged basin 800 feet (243^m8) long and 500 feet (152^m4) wide, with depths of 15 to 21 feet (4^m6 to 6^m4). It is protected by a breakwater extending 600 feet (182^m9) southeasterly and
 35 thence southerly 100 feet (30^m5). The Town wharf, 350 feet (106^m7) long, lies 800 feet (243^m8) southwesterly of the breakwater. On the north side is a depth of 17 to 20 feet (5^m2 to 6^m1) and on the south side 11 to 15 feet (3^m4 to 4^m6). The channel from the bay approaches the outer end of the breakwater, in a southeasterly direction, with a limiting depth of 17 feet (5^m2), and is marked
 40 by one red and three black spar buoys.

Marine railways.—There are two marine railways; the larger one with a cradle 85 feet (25^m9) long and 32 feet (9^m8) wide, draft forward $8\frac{1}{2}$ feet (2^m5), aft $13\frac{1}{2}$ feet (4^m1), has a lifting capacity of 350 tons. The smaller one has a cradle 80 feet (24^m4) long and 30 feet (9^m1) wide, draft forward $4\frac{1}{2}$ feet (1^m3),
 45 aft $10\frac{1}{2}$ feet (3^m2), and a lifting capacity of 200 tons.

Light.—A *fixed red* light is shown, from a pole near the outer end of the breakwater, at an elevation of 19 feet (5^m8), visible 7 (6 nautical) miles.

Colpoys Village is situated on the west side of the bay and $2\frac{1}{4}$ miles from Wiarton; a vessel may anchor 300 yards (274^m3) off in 5 fathoms (9^m1).

Chart 2282.

Colpoys Village wharf is 350 feet (106^m7) long with a pierhead 30 feet (9^m1) wide; along the face is a depth of 16½ feet (5^m0). In 1936 the berth on the south side 100 feet wide and 270 feet (82^m3) long was dredged to a depth of 10½ to 16½ feet (3^m2 to 5^m1).

At **Oxenden Village**, on the east side of the bay opposite Colpoys, is a Government wharf 240 feet (73^m2) long with a depth of 13½ feet (4^m2) at the outer end and 11½ feet (3^m5) in the berth alongside, 60 feet (18^m3) in length.

Hay Island, situated 1¼ miles eastward from Kings Point, is thickly wooded the tops of trees being about 360 feet (109^m7) above the water, the exposed clay-bank at the north end being 128 feet (39^m0) in height. The island is 2½ miles long north and south, with a breadth of 1¼ miles. The water is very deep close to the west coast, but from the northwest extremity shoal water makes out 300 yards (274^m3). The remainder of the coast may be approached to 200 yards (182^m9). A quarter of a mile northwestward of **South Point**, a vessel may anchor in 7 to 8 fathoms (12^m8 to 14^m1), with good shelter from all winds.

White Clouds Island lies south and is separated from Hay Island by a passage a little over a mile wide, and a good deep channel 1½ miles wide divides it from the west shore of Colpoys Bay. The coast of the island may be everywhere approached to 200 yards (182^m9), excepting about **North Point**, where a shallow rocky flat makes out a quarter of a mile.

Kidd Bay is a considerable indentation on the west side of White Cloud Island, and in which a vessel may find anchorage, though the water is rather deep. There is a wharf near the former mill site on the southern side of the bay.

Gunderson Shoal is a narrow rocky patch 300 yards (274^m3) long, with 18 feet (5^m5) of water over it, lying 1¼ miles southwestward from Kidd Point, the southwest extreme of White Cloud Island.

Cameron Point (Lat. 44° 49' N., Long. 80° 59' W.) is the name given to the rounding point of the main shore south one mile of White Cloud Island, and close to which the water is deep. Three-quarters of a mile back from this point is a conspicuous cliff 371 feet (113^m1) high known as **Skinner Bluff**.

North Keppel is the village situated on the shore of Big Bay fronting the gap between White Cloud and Griffith Islands. There is a Government wharf, 372 feet (113^m4) long with a pierhead 65 feet (19^m8) in length; along the face is a depth of 13 feet (4^m0).

The shore of **Big Bay** may be approached anywhere to 200 yards (182^m9), but a heavy sea rolls in with a northerly wind. The land at the back of the bay gradually rises until it culminates in three hills, the western being called **Esther Cliff** 372 feet (113^m4) high, the middle one **Halliday Hill** of the same height, and the eastern known as **Dodds Hill** 432 feet (131^m7) high.

Cape Commodore is a gradually rounding point on the east side of Big Bay, and is the western entrance point to Owen Sound. A clay bank, 144 feet (43^m9) high, follows the shore around at a distance of 200 yards (182^m9) and at this distance off the shore, a vessel will have good water.

Griffith Island, 2 miles long north and south by 1¾ miles wide and thickly wooded, is separated from Cape Commodore by a deep water channel 2 miles wide. The tops of the trees give it an elevation of about 300 feet (91^m4). The north side of the island should receive a berth of 300 yards (274^m3), but its other shores may be approached to half that distance.

Chart 2282.

Light.—A *flashing white* light is exhibited, at an elevation of 85 feet (25^m9), from a white, circular stone tower on the northeastern side of Griffith Island.

Anchorage.—On the south side of Griffith Island, a vessel will find good shelter from northerly gales, by anchoring in 5 fathoms (9^m1), off the two reddish coloured claybanks, known as **Patterson Cliffs**.

Wharf.—On the south side of Griffith Island is a Government wharf about 80 feet (24^m4) long extending to a depth of 6 feet (1^m8) (below 578·5) and protected by a groyne 120 feet (36^m6) in length, parallel to and 85 feet (25^m9) to eastward of it. The Farnell wharf, irregular in shape, is westward of the Government wharf, a distance of 40 feet (12^m2) separating its outer end from the side of the latter.

Owen Sound.—This fine bay, at the head of which is situated the city of that name, is, on the line joining Vail Point and Cape Commodore, 9 (8 nautical) miles wide, and from this line to the city 13½ (11¾ nautical) miles long, gradually narrowing to the head. It makes a good well-sheltered approach to the harbour in westerly gales, its shores being everywhere approachable to a quarter of a mile, with the exception of Vail and Squaw Points on the east side of the sound.

Presqu'Isle is a small village on the western shore of the sound, distant 7 (6 nautical) miles from the entrance to Owen Sound Harbour. On the north side of the low point, which at one time was no doubt very nearly an island and suggested its name, there is a wharf, along the west side of which vessels could find 11 feet (3^m4) (at low stages there may be 4½ feet (1^m3) less) of water.

A rocky bank, with 9 to 12 feet (2^m7 to 3^m7) of water on it, extends from the extremity of **Presqu'Isle Point** in a northeast direction, a quarter of a mile.

Anchorage may be had, in 8 to 10 fathoms (14^m6 to 18^m3), sandy bottom, half a mile northward of the wharf, but the proximity of the deep water would entail a vessel swinging close to the shore with the wind onshore.

Between Cape Commodore and Presqu'Isle the coast may everywhere be approached to 250 yards (228^m0).

Vail Point lies 5½ miles westward of Cape Rich (*see* page 99) and 14 miles from the City of Owen Sound, and consists of a gravelly bank 27 feet (8^m2) high.

Wharf.—Vail Point Government wharf extends 170 feet (51^m8) westerly, with an ell end 80 feet (24^m4) long and a depth of 15 feet (4^m6) along the face.

Vail Point Shoal is a dangerous rock bank extending from the point of that name in a northwest direction 1½ miles, at which distance there is only 8 feet (2^m4) of water, while on the bank there are several spots with less than 6 feet (1^m8).

Firing Range.—A firing range has been established off Vail Point and Cape Rich bounded as follows:

Beginning at a point on shore in latitude 44° 42' 50'' N., longitude 80° 46' 20'' W., the boundary extends 5 miles 328° to a point marked by a black light-and-bell-buoy, thence 3½ miles 063°, thence 8 miles 091°, thence 6½ miles 144°, thence about 5½ miles 236° to a point on the shore about 4 miles northward of Meaford.

Chart 2282.

The boundary of the danger area will be marked by spar buoys, orange-yellow in colour.

No unauthorized person or vessel will be permitted to enter the danger area described above.

5

Light-and-bell-buoy.—On the northwest corner of the above firing range is moored a light-and-bell-buoy, painted black and exhibiting a *flashing white* light.

Two miles southwesterly from Vail Point is a shoal spot, with 6 feet (1^m8) of water over it, and lying on the edge of the 3-fathom (5^m5) line of a bank extending nearly one-half mile from shore. From this spot, the 3-fathom (5^m5) line runs northeast half a mile and southwest one mile. Half-way between this spot and the western extremity of Vail Point Shoal is found a small 5-fathom (9^m1) patch surrounded by deeper water. 10

Coffin Hill, surmounted by timber, is a conspicuous feature 354 feet (107^m9) high, three-quarters of a mile from shore, and 4 miles southwestward of Vail Point. Between the latter and the point abreast of Coffin Hill the shore is foul. 15

Coffin Cove was formerly a snug little cove for boats, but very little remains of it now but the name. The little point that used to shelter the cove is situated 3½ miles northeastward from Squaw Point, and 2¼ miles from the village of **Leith**. 20

For 3 miles northeast of Coffin Cove, the shore may be approached to 250 yards (228^m6), but, southwest of the same cove a shoal bank gradually widens, until off Leith not more than 3 fathoms (5^m5) will be found a quarter of a mile from shore. 25

Chart 2271.

Squaw Point (Lat. 44° 37' N., Long. 80° 54' W.), low rocky and wooded, is three miles from the entrance to the harbour of Owen Sound and half that distance southwestward of the village of Leith. A line joining Squaw Point to Bayview Point, on the opposite side, may be said to mark the limit to the deeper water of Owen Sound. From Squaw Point southward for a distance of 2 miles, and extending offshore for a distance of about 400 yards (365^m8), is a shoal ledge over which there is a depth of less than 6 feet (1^m8). 30

Squaw Point Shoal takes its name from the point off which it extends one-third of a mile, at which distance there is a depth of 8 feet (2^m4) over rocky bottom. 35

Buoy.—A black light-buoy, showing a *flashing white* light, is moored on the east side of the channel off Squaw Point Shoal.

Clearing mark.—The leading lights at the entrance to the harbour in line, bearing 195°, lead well clear of the shoal. 40

Sutton Point is a slight projection 1¾ miles southward from Presqu'Isle, and marks the southern termination of a low gravelly cliff.

Bayview Point and **Balmy Beach**, 3½ miles southwestward from Sutton Point and 3 miles from the entrance of Owen Sound Harbour, are conspicuously marked by a large summer hotel and cottages. The hotel has a tall square 45

Charts 2271, 2282.

- tower, which at night, during the tourist season, shows a big group of lamps. This inconspicuous low, wooded point has deep water close to it. About 400 yards (356^m8) northward of the point, extending from the shore, are a number
 5 of small boat landings and from this region an irregular, rocky flat extends eastward with depths of less than 12 feet (3^m7). South of the point, as far as Brookholm, the soundings are irregular, and the coast foul. The flat extends about 300 yards (274^m3) offshore. Close westward of it is a snug little boat harbour, and a quarter of a mile southwest of Bayview Point is a stream named
 10 **Indian Brook.**

- Brookholm**, now incorporated with Owen Sound, stands on a rising ground on the west side of the sound, three-quarters of a mile northward of the harbour entrance; and from the shore, the ruins of a former wharf extend 600 feet (182^m9) eastward. Southward of the wharf are some clusters of piles that
 15 run parallel to the shore. The United Church, with its spire, is a conspicuous object. South of Brookholm to the harbour entrance, the water is shoal with depths of less than 6 feet (1^m8) over mud and sand.

- The city of **Owen Sound** is pleasantly situated on both sides of Sydenham River, which runs into the head of Owen Sound. It is the county seat of the
 20 County of Grey, and had in 1951 a population of 16,423. Supplies of all kinds can be easily had and extensive machinery repairs carried out. The station and yards of the Canadian National Railways are situated on the west side of the harbour and the Canadian Pacific Railway on the east side. It is an important manufacturing and shipping centre, with some forty substantial
 25 industries. A grain elevator of 4,000,000 bushels capacity is located on the west entrance pier.

Owen Sound has steamer connection with the principal lake ports.

- The chimneys of the Hobart Company and the Russel-Hipwell Engines Ltd. on the east side, and the grain elevator on the west pier are conspicuous
 30 on the approach to the harbour.

The **Pottawatamie River** empties into the sound west of the harbour entrance and can only be entered by boats. On the west side of the river entrance are the ruins of a former breakwater 1,600 feet (487^m7) long, the piles of which are still visible.

- 35 **Owen Sound Harbour.**—The entrance channel and inner harbour, from the approach red light-buoy to the outer end of the freight shed of the Canadian Pacific Railway on the east side, has a limiting depth of 21 feet (6^m4). From this point, the harbour shoals gradually to a depth of 4 feet (1^m2) at the head of the harbour.

- 40 **Facilities.**—Coal, fuel and diesel oil are available, but no bunker oil. Repairs to hull, engine and boilers can be carried out. Provisions and marine stores are available. Electric light and power is laid on to all wharves. There is a small marine railway. There are no pilots.

- Wharves.**—The eastern side of the harbour has a continuous line of wharves.
 45 The Government wharf extends for 1,650 feet (502^m9) from the entrance and has a depth of 18 feet (5^m5) alongside. It is used as a coal wharf. The Canadian Pacific Railway wharf adjoins the above wharf and has a length of 600 feet (182^m9), with a depth of 19 feet (5^m8) alongside. There is a large shed on the wharf. Next southward is a Government wharf, 1,400 feet (426^m7) long.
 50 The northern 800 feet (243^m8) of this wharf has two sheds on it, with a depth of 16 feet (4^m9) alongside; the remaining 600 feet (182^m9) have depths of 15 feet (4^m6) shoaling to 6 feet (1^m8) at the head.

Charts 2271, 2282.

On the western side at the outer end is the Great Lakes Elevator Company wharf. The northern 740 feet (225^m6) has a depth of 22 feet (6^m7) alongside; the adjacent 840 feet (256^m0) on which stands a large grain elevator, has a depth of 21 feet (6^m4) alongside. Four hundred yards (365^m8) southward of the above wharf is the Canadian National Railway wharf, 780 feet (237^m8) long, with a depth of 16 feet (4^m9) alongside. There is a large shed on the wharf. Adjoining the above wharf is the Owen Sound Transportation Company wharf, 450 feet (137^m2) long, with a depth of 17 feet (5^m2) alongside. There are a number of sheds on the wharf. South of this wharf is another Government wharf 460 feet (140^m2) long, with a depth of 11 feet (3^m4) alongside. 5 10

Lights.—Fog signal.—Radio beacon.—An *occulting red* light is exhibited, on the outer end of the west wharf.

Two *fixed green* leading lights are exhibited at Owen Sound. The front light is exhibited, at an elevation of 50 feet (15^m2), from a skeleton tower with black and white daymark, on the east side of the harbour entrance; the rear light is exhibited, at an elevation of 92 feet (28^m0), from a similar structure, 350 yards (320^m0), 195° from the front light. These lights lead to the harbour entrance. 15

A fog whistle sounds *one* blast every *30 seconds* at the front leading light.

There is a radio beacon situated near the front leading light. 20

Buoys.—A red light-buoy, showing a *flashing red* light, marks the northwestern side of the outer end of the dredged channel to the harbour. In addition, two red and three black spar buoys mark the west and east sides, respectively, of this channel, the outer black spar being equipped with reflectors.

Anchorage.—Good anchorage may be found to the westward of the leading line and about one mile northward of the front leading light in a depth of 6 to 7 fathoms (11^m0 to 12^m8), mud. 25

Directions.—Before reaching Squaw Point, the leading lights should be brought in line, bearing 195°, and so kept until nearly abreast of the outer end of the west pier, when a vessel should leave the range and steer into the harbour midway between the wharves. 30

Chart 2201.

The Claybanks.—From Vail Point already described (*See* page 96) the outer coast runs eastward 5½ miles to Cape Rich, and early midway between them is a light coloured conspicuous bank of clay called the Claybank, 1¾ miles long, attaining an elevation in its middle part of 370 feet (112^m8). This feature together with the high land of Cape Commodore (known as **Payette Hill**), Griffith Island, and Cape Croker, render the approaches to Owen Sound unmistakable from the offing. A rocky flat makes off from the shore of the Claybanks to a distance of a quarter of a mile. 35 40

Cape Rich, in contrast to the high land 1½ miles at the back of it, is a comparatively low point, wooded on the western, and cleared on the eastern side. The shores of the cape and bight eastward of it are clean, there being 4 fathoms (7^m3) at a distance of 200 yards (182^m9).

Anchorage, in the bight eastward of Cape Rich, may be had in 5 to 6 fathoms (9^m1 to 11^m0) sandy bottom with shelter from westerly winds, but on account of the probability of the gale veering sooner or later to the north, a vessel should be in readiness to leave on the first sign of such a change. 45

Chart 2201.

Twelve Fathom Bank, with least water of that depth, is a broad rocky rise in the bottom $3\frac{1}{3}$ miles northward of the Claybanks. The soundings in the locality may be useful in foggy weather to a vessel making Owen Sound from the north or northeast, as between Twelve Fathom Bank and Cape Rich shore the water again deepens to 20 to 24 fathoms (36^m6 to 43^m9) with sandy bottom finally shoaling to 10 fathoms (15^m3) over rock and gravel, two-thirds of a mile off the Claybanks.

From Cape Rich, the shore trends in a general southerly direction $7\frac{3}{4}$ ($6\frac{3}{4}$ nautical) miles to Meaford, being fringed with boulders and shallow water for 200 yards (182^m9). The land at the back of this part of the coast rises suddenly to a height of about 400 feet (121^m9), and is partly cleared.

Meaford, which had in 1951 a population of 3,178 is situated at the mouth of **Bighead River**, $3\frac{3}{4}$ miles westward from Boucher Point and $7\frac{3}{4}$ (7 nautical) miles southward from Cape Rich. The most prominent objects from the offing are the old and new water towers close together, and the tall brick chimney near the head of the harbour. Meaford is the terminus of a branch of the Canadian National Railways affording connection with Thornbury, Collingwood, and the general system.

The country back from Meaford is well settled with farmers, the land being well suited for the cultivation of all kinds of grain and hardy fruits.

Meaford Harbour (Lat. $44^{\circ} 37' N.$, Long. $80^{\circ} 35' W.$) is the enlarged mouth of the river, protected on its east and north sides by a breakwater running in a northerly direction from the shore a quarter of a mile, and thence, under the name of North breakwater, westerly 500 feet (152^m4). From the west it is sheltered by the west breakwater, 400 feet (121^m9) long. In 1954 a least depth of $16\frac{1}{2}$ feet (5^m1) could be carried to within 500 feet (152^m4) of the site of the former bridge.

On the west side of the river, close inside the river mouth, is a concrete wall called the West Wall, which is 627 feet (191^m1) long. On the east side of the river is a similar wall about 940 feet (286^m5) long. The southern end of both walls is at the site of a bridge now demolished. A depth of $13\frac{1}{2}$ feet (4^m2) is situated 390 feet (118^m9), 140° from Meaford rear light.

Buoys—Two red spar buoys mark the channel westward of North Breakwater, and a red spar buoy is moored close northward of the outer end of the West Breakwater.

Wharves.—There is a berthing length of 2,330 feet (710^m2) on the east side of the river, with railroad tracks on the wharf, but no water mains or light, used mainly for coal and lumber. There is a freight shed on the West Wall. There is a water main near the wharf and electric light, but no railroad tracks. The inside of the North Breakwater may also be used for berthing. Coal, fuel and Diesel oils are obtainable.

Lights.—A *flashing green* light is exhibited, at an elevation of 20 feet (6^m1), from a black, steel tower on the outer end of the North Breakwater.

A *fixed red* light is exhibited, at an elevation of 32 feet (9^m8), from the roof of a building, southwestward of the West Breakwater.

These two lights in line bearing 182° lead to the North Breakwater.

Chart 2201.

A depth of 3 fathoms (5^m5) will be found close northward of the breakwater, but from the point, 1½ miles east of the harbour, shoal water extends a quarter of a mile, the shore inside this line being foul.

Coast.—Close west of **Boucher Point**, a small, stony projection, is a bay 5 2⅓ miles wide at the mouth and nearly half a mile long, but useless as it is shallow and boulder strewn.

Lora Bay is a small boat harbour situated 1½ miles southeast from Boucher Point.

The shore between Meaford and Thornbury is fringed at a short distance 10 back by a conspicuous clay bank, 150 feet (45^m7) high in places. For half a mile back from the edge of this bank abreast of Boucher Point the land is flat, it then suddenly rises to a height of over 500 feet (152^m4), leaving on its west side the valley of Bighead River, and on the east between it and Blue Mountain, a valley down which flow **Beaver** and **Indian Rivers**. 15

Thornbury is situated at the mouth of the Beaver River, 9¾ (8½ nautical) miles northwestward from Nottawasaga Island lighthouse. The town had, in 1951, a population of 971, and contains a large flour mill with three black smokestacks conspicuous from the water, the usual churches, schools, and stores. It is on the Meaford branch of the Canadian National Railways and is also 20 connected by a good motor road with Owen Sound and Collingwood. The land behind Thornbury gradually rises until at a distance of about 10 miles it is nearly level with Blue Mountain and the high land, back of Boucher Point.

The nearly straight shore between Boucher Point and Thornbury is fringed with boulders and shallow water for a distance of a quarter of a mile. 25

At Thornbury the 3-fathom (5^m5) line is 300 feet (91^m4) off the end of the pier.

The harbour has an area of about 4 acres with a depth of 16 feet (4^m9), and 15½ feet (4^m7) in the entrance channel 100 feet (30^m5) wide. It is sheltered from northwest winds by a breakwater extending northeasterly 500 feet (152^m4); 30 and from northeast winds by two short piers lying in an approximately south-east direction, the latter eastern ends being connected with each other and the shore by a narrow breakwater running northerly 200 feet (61^m0) from the northwest extremity of the hooked point protecting the harbour from the north. A vessel 150 feet (45^m7) long and 13 feet (4^m0) draught can turn in the harbour. 35 The wharf, on the southwest side of the harbour, is 600 feet (182^m9) long with a depth alongside of 14 feet (4^m3). The superstructure of the outer part of the breakwater, lying outside the front light, has been destroyed and the underwater ruins should be avoided in approaching the structure.

Leading lights.—**Fog signal.**—Two leading lights are exhibited, the 40 front light, *fixed red*, at an elevation of 22 feet (6^m7), from a steel tower on the west breakwater; and the rear light, *fixed red*, at an elevation of 36 feet (11^m0) from a mast with white, diamond-shaped daymark on the west side of the Beaver River, 376 feet (114^m6), 214° from the front light. These two lights in line, bearing 214° lead in through the channel to the entrance between the 45 breakwater.

A hand fog horn answers vessels signals.

A rock, with less than 6 feet (1^m8) over it, lies off the end of the northwest breakwater, but the line of the leading lights leads southeast of it.

Chart 2201.

Buoy.—A red spar buoy marks the above rock, and a black spar buoy is moored on the east side of the dredged cut, opposite it. The entrance to the harbour is further marked by a black and a red spar buoy located, respectively,
 5 800 and 450 feet (243^m8 and 137^m2) from the front leading light.

Directions.—To lead through centre of dredged channel, toward the entrance between the breakwaters, keep the two leading lights in line, passing between the two buoys.

Craighleith is a small village on the bay shore 6½ miles southeastward
 10 from Thornbury and 5 miles westward from Collingwood, but is not very conspicuous from the vessel track. The Meaford branch of the Canadian National Railways runs through it. A large area of deep water lies off Craighleith and inside the shallow Mary Ward Ledges, but as there is no trade it is unimportant. The shore from Thornbury to Craighleith trends nearly straight, and is fringed
 15 with boulders, awash. The 3-fathom (5^m5) line approaches the shore to within half a mile. Off Thornbury the same danger line is only 300 yards (274^m3) off the end of the pier.

Blue Mountain.—This conspicuous high land reaches to within two-thirds of a mile of the shore, at that distance west of Craighleith. At its northern edge
 20 the mountain has a height of over 800 feet (243^m8) and farther inland probably attains a height of 1,200 feet (365^m8). From the north point the side of the mountain trends southeast and south, but its height is rendered less conspicuous on account of the land in the valleys rising, as it recedes from the bay. On the northeast side are a couple of remarkable rocky patches, called **Cave Cliff**
 25 and **Osler Bluff**, 1,045 and 1,075 feet (318^m5 and 327^m7), respectively, above the level of the bay. On the west side there is nothing remarkable. The principal motor road runs between the high bluff of Blue Mountain and the Georgian Bay shore.

Between Craighleith and Collingwood the shore trends nearly straight, but
 30 is indented with several open, shallow bays and fringed with huge boulders.

Chart 2281.

Nottawasaga Island (Lat. 44° 32' N., Long. 80° 16' W.), itself low, but made to appear higher by the trees, is 400 yards (365^m8) long in a northwest direction by 200 yards (182^m9) wide, and its lighthouse, on the very northern
 35 extreme, bears 314°, 2¼ miles from the eastern extremity of the Collingwood breakwater. Shoal water fringes the northeast side for a width of only 175 yards (160^m0), but from all other sides shoal water extends long distances, the island being connected to the shore, off which it lies three-quarters of a mile, by very shallow water.

Light.—Fog signal.—A *flashing white* light every 5 seconds, is exhibited, at an elevation of 86 feet (26^m2), from a white circular tower on the northern extremity of Nottawasaga Island.

A red section shows over the shoals southeastward of the light-tower.

A hand fog horn answers vessels' signals.

Wheeler Bank, with 16 feet (4^m9) least water on its southeastern end, lies one-half mile southeastward from Nottawasaga Island light. The bank is narrow, and 300 yards (274^m3) long northwest and southeast.

Chart 2281.

George Rock has 13 feet (4^m0) least water on its northwestern end, which lies a third of a mile northeastward from Nottawasaga Island light. It is also narrow and 400 yards (365^m8) long northwest and southeast.

Buoy.—A red spar buoy is moored, in 4 fathoms (7^m3) of water, north of George Rock, 2,300 feet 058° from Nottawasaga Island lighthouse. 5

Mary Ward Ledges.—As all the water, for 5 miles west and 6½ miles northwest, of Nottawasaga Island is very foul, (known as Mary Ward Ledges) only some of the outer shoal spots will be mentioned:—

Sanford Ground, with 16 feet (4^m9) least water on it, is small and the northwesternmost of Mary Ward Ledges. It bears 306°, and is distant 5½ miles from Nottawasaga Island light. 10

Hiawatha Bank, small and having 15 feet (4^m6) on it, bears 314°, 4½ miles from Nottawasaga Island light.

Buoy.—A red spar buoy is moored 200 yards (182^m9) northeast of Hiawatha Bank. 15

Rowland Bank, with 16 feet (4^m9) least water on it, lies two-thirds of a mile southward of the latter.

Thomas Long Shoal, with 7 feet (2^m1) least water on it, occupies the northwest extremity of the shoaler portion of the Mary Ward Ledges. Its northwest end with 11 feet (3^m4) least water on it, bears 304°, distant 4 miles, from the same light. 20

Dalton Reef, with the same depth on it is situated on the northeastern edge of the shoaler part of Mary Ward Ledges. It bears 310°, 2½ miles from the same light. 25

Buoy.—A red spar buoy is moored, just inside the 5-fathom (9^m1) line, midway between Stephen Ground and Hiawatha Bank buoys and on their alignment.

McCarthy Rock, with 15 feet (4^m6) of water over it, lies 313° distant 2 miles from the same light. 30

Stephen Ground, with the same depth, bears 320° distant a little more than 1½ miles from the same light.

Buoy.—A red spar buoy is moored 500 feet (152^m4) northeast of this danger.

Collins Reef, practically dry, is an outer spot on the general bank, and lies two-thirds of a mile, 320°, from Nottawasaga Island light. The shoals about Collins Reef are locally known as **The Stags**. 35

New Bank (Lat. 44° 37' N., Long. 80° 20' W.), with 24 feet (7^m3) least water on it, is not a very formidable danger except to a large vessel in a heavy sea. It is situated 6·1 (5·4 nautical) miles bearing 322° from Nottawasaga light. Under 10 fathoms (18^m3), this bank is 1½ miles long in a northwesterly direction, the shoalest spot being near the middle. 40

Light-and-bell-buoy.—A light-and-bell-buoy, painted with red and black horizontal bands, and showing a *flashing white* light, is moored on New Bank, 321° distant 6·4 miles from Nottawasaga light.

Collingwood Harbour.—The entrance to this artificial harbour is situated 24½ (21¼ nautical) miles southeastward from the nearest part of Cape Rich, and nearly 19 (16¼ nautical) miles, 191° from Christian Island (Bar Point). The har- 45

Chart 2281.

bour is formed by extending piers from the shore, that on the east side running out nearly two-thirds of a mile in a general northwesterly direction, that on the west side half a mile in a general northeasterly direction, with a breakwater
 5 extending eastward over 1,000 feet (304^m8) enclosing an area of 267 acres, not more than a quarter of it, however, being of any use to vessels of even moderate draught. There being no room for anchorage, vessels must secure to the wharves where with good lines, they are safe in any gale, although a considerable sea rolls in between the breakwaters a quarter of a mile apart. The dredged channel is
 10 not less than 200 feet (61^m0) wide, and 24½ feet (7^m4) deep. A turning basin, radius 385 feet (117^m3), has been dredged to the same depth, abreast the new elevator dock. The dredged channel from deep water to the south end of the Government cribs has been dredged to a depth of 21 feet (6^m4). The continuation of this channel, leading to the Canadian National Railways wharf, has been
 15 dredged to a depth of 18½ feet (5^m7). In the approach to the dry dock, there is a depth of 16 feet (5^m8).

The southern part of the harbour, between the outer ends of the Government or town wharf and the Canadian National Railways wharf had a depth of 16 feet (4^m9) in 1943.

20 A channel, 100 feet (30^m5) wide and dredged to a depth of 18 feet (5^m5), extends from the main channel, at a point about 200 feet (61^m0) north of the front leading light, to the Imperial Oil Dock on the west side of the harbour.

Note.—Add 3 feet (0^m3) to the above harbour depths to have them correspond to the datum of the chart.

25 **Collingwood** (*Lat.* 44° 30' *N. Long.* 80° 13' *W.*) had, in 1951, a population of 7,413, and is the centre of a good farming and fruit-growing country. Churches for all the principal religious bodies are to be found here. Supplies of all kinds can be easily had. The Canadian National Railways serves the town. The town, being low, none of the buildings except the elevator and the Imperial Oil
 30 Co., Limited, on the west side, are conspicuous for any distance out in the bay, but its close proximity to Blue Mountain and Nottawasaga Island makes it easily picked up.

Leading lights.—On the northern extreme of Fisherman Point, a light is shown, at an elevation of 33 feet (10^m1) from a pole with a white daymark with a
 35 black vertical stripe. Two-thirds of a mile southeastward of this light from, a red, steel skeleton tower with a white diamond-shaped daymark with a black vertical stripe, a light is shown, at an elevation of 106 feet (32^m3). These lights are *fixed green* and in line, bearing 150°, lead into the entrance to Collingwood Harbour, between Mary Ward Ledges and Lockerbie Rock, to the intersection
 40 with the alignment to Collingwood shore leading lights.

Leading lights, *fixed red*, lead into the harbour from the intersection of their alignment with that of the Fisherman Point leading lights to the turn in the dredged channel. The front light is exhibited, at an elevation of 28 feet (8^m5), from a square white tower on a crib situated a third of a mile southward from
 45 the head of the breakwater. The rear light is shown, at an elevation of 58 feet (17^m7), from a skeleton tower on the south shore of the harbour half a mile, 178°, from the front light.

Fog signal.—A hand horn at the front *fixed red* light answers signals from vessels.

50 **Light-buoy.**—Three-quarters of a mile from the breakwater and 500 feet (152^m4) west of the intersection of the alignments of the leading lights is moored a red light-buoy, showing a *flashing red* light.

Chart 2281.

Dry docks.—At Collingwood there are two dry docks operated by the Collingwood Shipbuilding Co. The longer one, known as No. 1, has the following dimensions:—

Length on blocks, $472\frac{3}{4}$ feet (144^m2); length overall, 518 feet (157^m9); width of floor, $60\frac{1}{4}$ feet (18^m3); width at entrance, $58\frac{3}{4}$ feet (18^m0); depth over sill, 15.5 feet (4^m7). 5

The second dry dock, known as No. 2, has the following dimensions:

Length overall, 412 feet (125^m6); width of floor, 100 feet (30^m5); width at entrance, $93\frac{3}{4}$ feet (28^m7); depth over sill, 15.5 feet (4^m7). 10

The above depths correspond to lake elevation of 579 feet above mean tide at New York.

Shipyard.—A well-equipped yard for the construction and repair of all kinds of vessels and machinery has been established around the dry docks.

Wharves.—The new elevator dock, 800 feet (243^m8) in length, lies about 430 feet (131^m1) to westward of the eastern breakwater and parallel to it. Connecting the two is the pier on which the elevator is built. Two mooring cribs, each 100 feet (30^m5) in length and situated 140 and 280 feet (42^m7 and 85^m3), respectively, to southward of and in line with the dock, provide a mooring frontage of about 1,300 feet (396^m2). The depth alongside is 21 feet (6^m4). The channel and turning basin abreast of here have a maximum width of 700 feet (213^m4). Masters turning their vessels here should, for maximum space, place the stem of the ship against the wharf at a point 175 feet (53^m3) north of the centre line of the elevator. A yellow triangle painted on the wharf indicates the most suitable position. 15 20 25

On the north side of the Imperial Oil Co. Limited wharf, the depth is 13 feet (4^m0) and on the south side of the Charlton wharf, $12\frac{1}{2}$ feet (3^m8) over rock.

These depths are liable to revision from time to time as dredging operations may require. 30

Note.—Add 3 feet (0^m9) to the above figures, to obtain depths to correspond with the datum of the chart, viz: 582 feet above mean tide New York.

Buoys.—With one exception, the buoys marking the edges of the dredged channel, and the turning basin, are red spars on the starboard hand and black spars on the port hand, entering. The inner buoy on the eastern side, moored about 500 feet (152^m4), 027° from the front light of the Collingwood shore range, is a black light-buoy, showing a *flashing white* light. The outer black spar buoy is fitted with a radar reflector. 35

The edges of the dredged cut to the Imperial Oil Co. wharf are marked by spar buoys. 40

Fisherman Point, made conspicuous by the buildings of the town waterworks, is a small point, a third of a mile east of the old elevator and off which shoal water runs one-third of a mile under the name of **Fisherman Shoal**.

Laffertys Home is an important danger lying with its east and shoalest end of 12 feet (3^m7), bearing 030° distant $1\frac{1}{3}$ miles from the eastern end of the Collingwood breakwater; from the shoalest spot, the bank trends northwestward a quarter of a mile, to a depth of 17 feet (5^m2). 45

Lockerbie Rock, with 16 feet (4^m9) of water on it, is situated a third of a mile northwest of Laffertys Home, and bearing 004° , distant 1.4 miles from the eastern end of the breakwater. 50

Chart 2281.

Light-buoy.—Moored in 4 fathoms (7^m3) a quarter of a mile westward from Lockerbie Rock, is a black light buoy exhibiting a *flashing white* light.

The north fall of Blue Mountain, in line with the south point of Nottawasaga Island, bearing 266° , leads 150 yards (137^m2) north of Lockerbie Rock, and a quarter of a mile in the same direction from Laffertys Home.

A small rock, with 22 feet (6^m7) least water on it, lies nearly a third of a mile northeast of Lockerbie Rock. The last clearing mark leads 200 yards (182^m9) southward of this rock.

10 **Simcoe Bank**, small in extent with 25 feet (7^m6) of water on it, bears 063° distant $1\frac{1}{2}$ miles from Nottawasaga lighthouse.

The Ridge is the name given to a narrow bar, with depths under 12 feet (3^m7), lying across the entrance to the harbour and through which the present channel has been dredged.

15 **Holland Rock**, with 12 feet (3^m7) on it, and **Gamon Rock** with 13 feet (4^m0), are two dangers on the Ridge, lying, respectively, one-third and one-half mile eastward from the eastern end of the breakwater.

Directions for Collingwood Harbour.—New Bank (*see* page 103) with 24 feet (7^m3) of water over it (and in low stages there may be $4\frac{1}{2}$ feet (1^m3) less) is the most outlying danger for a heavy draught vessel approaching Collingwood from the northwest.

20 From half a mile off Cape Rich to a position $1\frac{1}{2}$ miles northward of Nottawasaga light, and on the line of the Fisherman Point leading lights, $3\frac{3}{4}$ miles northwestward of the front light, the course is $121\frac{1}{2}^\circ$, distance 22 (19 nautical) miles.

25 From a position $1\frac{1}{2}$ miles northeastward of Lonely Island (north) light to the same relative position in regard to Collingwood, the course is $139\frac{1}{2}^\circ$ and the distance $92\frac{3}{4}$ ($80\frac{1}{2}$ nautical) miles.

30 From a position 4 miles off Bustard Rocks main lighthouse (*see* page 239) to the same position, the course is 157° and the distance is 99 (86 nautical) miles.

From one mile southward of Seguin Bank light-buoy in the main approach to Parry Sound Harbour, the course to the position off Collingwood as described above, is $166\frac{1}{2}^\circ$ and the distance 54 (47 nautical) miles.

35 The course from Campana Shoal buoy, Christian Island Passage, to the same position is 198° and the distance is $15\frac{1}{2}$ ($13\frac{2}{3}$ nautical) miles.

When approaching the dredged cut on the shore range, a vessel will pass into the red sector from Nottawasaga Island light, when about a third of a mile from the entrance piers.

40 **Onetree Island** (Lat. $44^\circ 30' N.$, Long. $80^\circ 11' W.$), composed of boulders, small, 5 feet (1^m5) high, and not at all conspicuous, is situated close to shore, $1\frac{1}{2}$ miles southeast from Fisherman Point, the shore between having a shallow bank extending from it one-third of a mile.

45 **Nottawasaga Bay.**—The water southeast of the line joining Onetree Island and Gidley Point is called the head of Nottawasaga Bay. On the above line the deepest water is 30 fathoms (54^m9), the 10-fathom line (18^m3) approaching to within one mile of Onetree Island, $1\frac{1}{2}$ miles of Spratt Point, $2\frac{1}{4}$ miles of Yarwood Point, and one mile of Gidley Point. Between the 3- and 10-fathom (5^m5 and 18^m3) lines will generally be found good holding ground of sand over mud, though completely exposed to westerly gales.

Chart 2201.

From Onetree Island, the shore trends southeast $4\frac{1}{4}$ miles to the southwest end of **Wasaga Beach**. This stretch of shore is very foul, there not being more than 6 feet (1^m8) of water over boulders at the distance of 250 yards (228^m5). The 3-fathom (5^m5) line, however, approaches the shore at an average distance of one-third of a mile. 5

The above beach runs in a general northeasterly direction $6\frac{1}{2}$ miles to the mouth of the **Nottawasaga River**. Wasaga Beach, one of the finest in this district, is hard sand, along which is an excellent motor road. Behind it, at a distance of 200 feet (61^m0), the sand forms a low cliff surmounted by pines. The 3-fathom (5^m5) line skirts the beach at an almost uniform distance of half a mile, and there are no boulders upon the bank. The Nottawasaga River, with about 6 feet (1^m8) of water over the bar at its mouth, is a narrow, fairly deep stream, the last $4\frac{1}{2}$ miles of which flows northeastward parallel to the beach, at an average distance of a quarter of a mile from it. There are two summer post offices here called **Wasaga Beach** and **Oakview Beach**. 10 15

From the mouth of Nottawasaga River the shore, with a bend three-quarters of a mile deep, trends northward $4\frac{3}{4}$ miles to **Spratt Point**. This portion of the shore is fringed for the most part with stones, and shallow water makes off for an average distance of half a mile. Spratt Point itself is also stony. The summer post office of **Woodland Beach** is about 2 miles southward of Spratt Point. 20

From Spratt Point, the clean sandy beach with scarcely a stone upon it runs northeastward 5 miles to **Yarwood Point**, taking the form of a slight bay running in half a mile from the line of the points. This particular part of the shore is well marked by low, bare sand bluffs about 40 feet (12^m2) high, and is fringed by shoal water for an average distance of one-third of a mile. Shoal water extends 300 yards (274^m3) from Yarwood Point. 25

Dow Bay is a slight indentation in the shoreline, situated 2 miles northwestward from Yarwood Point. Its shore is sandy, but the water is very shoal, making boat landings in a heavy sea rather dangerous. Off the bay, shoal water extends two-thirds of a mile. There is a Government wharf 103 feet (31^m4) long extending to a depth of $5\frac{1}{2}$ feet (1^m7). 30

Grandolph Bay is the large open space lying between Dow Bay and Tiny Island, and fronted by two dry boulder reefs, 5 feet (1^m5) high. The 3-fathom (5^m5) line is over a mile distant from the head of this bay, and, as the bottom is hard, a vessel will find no holding ground anywhere near the shore. 35

Tiny Island lies 2 miles northwest from Dow Bay, is small, 25 feet (7^m6) high, and covered with tall dark trees that render it conspicuous. The shore bank with depths under 3 fathoms (5^m5) extends a little more than three-quarters of a mile from the island. 40

Tiny Beach is a portion of the shore a mile northwest of Tiny Island and is fronted with sand and shoal water for an average distance of half a mile. A ridge, 200 feet (61^m0) high, skirts the shore about two-thirds of a mile back from Tiny Beach. 45

Lafontaine Village is situated 2 miles back and northeastward from Tiny Beach. Its church is conspicuous from the bay.

From Tiny Beach, the northeast shore of Nottawasaga Bay trends northwesterly 3 miles to **Gidley Point**, which is low, densely wooded, and lined with large outlying boulders. On the south side, the 3-fathom (5^m5) line approaches to a quarter of a mile of the point, but very shoal water extends double that distance to the northwest. 50

Chart 2283.

Cedar Point is the northwestern part of the headland lying between Nottawasaga and Matchedash Bays; it is situated $4\frac{1}{4}$ miles northward from Gidley Point and $2\frac{1}{4}$ miles northeastward of the eastern extremity of Bar Point
5 of Christian Island.

A steep cliff, covered by trees, surmounts nearly the whole shore from Gidley Point to Cedar Point, and the shore is fringed with shoal water for an average distance of a quarter of a mile.

10 A shoal, with 11 feet (3^m4) of water on it, lies with its southwest extremity two-thirds of a mile from this shore, one-half mile southeast of Campana Shoal buoy, and $1\frac{1}{3}$ miles southeast from Bar Point of Christian Island.

CHAPTER VI

CHRISTIAN ISLAND TO WAUBAUSHENE AND MOOSE POINT INCLUDING WESTERN ISLANDS

DATUM.—See page 1.

The 30,000 Islands of Georgian Bay

5

Chart 2201.

For about 120 miles, along the northeastern shore of Georgian Bay, from the head of Matchedash Bay to Parry Sound, Key and Byng Inlets and on to the mouth of the French River and the eastern entrances to the North Channel and Manitoulin Island, there stretches an almost unbroken succession of islands, known as "The 30,000 islands of Georgian Bay." Their number greatly exceeds this for already some 48,000 have been marked on various charts and maps, and only a comparatively few of them have, as yet, ever been named. The islands of all sizes and shapes have the characteristic appearance of the neighbouring mainland points and inlets, are of granite and gneiss, and sparsely covered with a small growth of pine, spruce, birch, and poplar.

10

15

The mainland shore is very broken, and penetrated by numerous inlets and streams, some of the former being quite deep and commodious and extending inland for a distance of from 3 to 12 miles.

Some of the inlets have been either fully or partly charted, among the former being Matchedash Bay in which lies the more important ports of Penetanguishene, Midland, Port McNicoll, Victoria Harbour, Waubauskene, Port Severn (which is the Western or Georgian Bay Terminus of the Trent Canal system) and Tiffin Basin and the Muskosh Channel to Muskoka Mills; Parry Sound, both Main and South Channels, giving access to the Ports of Parry Sound, and Depot Harbour.

20

25

Byng Inlet (*Lat. 45° 46' N., Long. 80° 38' W.*) has been charted and, also, the outer portion of Key Inlet known as Key Harbour, and the entrance to French River.

Inlets partly charted, or whose approaches and entrances are shown upon the existing charts, include Shebeshekong Bay entrance channels east and north of Franklin Island, Shawanaga Inlet (southern entrance from the Parry Sound approaches), Pointe au Baril Harbour (or northern entrance to Shawanaga Inlet and Sturgeon Bay), and the entrance to Alexander Inlet.

30

Uncharted inlets, bays and river entrances along this coast, south of Parry Sound, include Honey Harbour, Bushby Inlet (Go Home River and Bay), Indian Harbour, the inner or northeastern section of Big David Bay, Twelve Mile or Deep Bay and Moon River Bay. By means of some of these, access is had to the Muskoka Lakes region, which lies eastward only some 12 to 15 miles from the Georgian Bay shore, by penetrating to the heads of inlets and completing the trip to be taken by canoe and portage; by rail or highway from Parry Sound, or Midland Bay ports, or by entering the Trent Canal at Port Severn and proceeding to Lake Simcoe.

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Northward of Pointe au Baril Harbour a number of extensive inlets including Bayfield Inlet, (presently being surveyed) Alexander Inlet, Charles Inlet, the entrance to Naishcotyang (Naiscot) River, Big River Bay, Sandy Bay, Henvey Inlet, Key Inlet above Key Harbour, Pickerel River entrances, Eastern Outlet and Western Channel entrances of the French River have not been charted.

45

Chart 2201.

In general, the islands extending from the Midland region northwestward to French River form an almost unbroken chain, whose outer general limit lies from one to four miles off the mouths of the rivers and inlets, that penetrate the mainland shore and along several sections of this coast. Only the outer fringe of islands, rocks and reefs with their intervening passages have been charted, and in many cases charting surveys have not been extended eastward to embrace the mainland shore.

Inside Passages

Between the inshore islands or mainland points and the outer fringe, a number of inside passages and vessel tracks have been surveyed and are used by coasting craft, from the Midland region northward to Pointe au Baril. The principal one of these inside buoyed tracks is entered at the southward near Minnicoganashene Island and followed northwestward up the shore past Muskoka Landing on Maxwell (Whalens) Island, Bushby Inlet, Big Davids Bay, Wahwahtaysee Island, Twelve Mile Inlet to the South Channel leading into Parry Sound, a total distance of 41·5 (36 nautical) miles.

If not entering Parry Sound, one may continue on by the Wabuno Channel outside of Parry Sound, but still within the shelter of the outer fringe of the islands, northward across the approaches to Depot Harbour and Parry Sound and by Snug Harbour and Franklin, through Shebeshekong Bay into Shawanaga Inlet, by Skerryvore and Ojibway to Pointe au Baril Harbour and Sturgeon Bay, and additional distance of 35 to 40 miles.

Charted inside channels lead also to Muskoka Mills (deserted) and Bushby Inlet.

In the northeastern corner of Georgian Bay, a charted inside track, known as Northeast Passage, leads through the outer rocks and islets off Key Harbour and between the Bustard Islands and the mainland to the mouth of French River, for a distance of 7 miles.

Besides the well-defined and more commonly used inside passages, there are numerous other routes between the islands and into the inlets, which may be navigated by the employment of local pilots, whose services are available at the various ports and watering resorts.

Chart 2283.

Christian Island, the largest of the three islands, 18 ($15\frac{3}{4}$ nautical) miles north of Collingwood, has an extreme length of 8 (7 nautical) miles in a north-westerly and southeasterly direction, and a maximum width of $4\frac{1}{2}$ miles. It is the home of the band of Chippewa Indians, who do some farming, but the island is for the most part thickly timbered, excepting at the village on the southeast shore. About one-half mile eastward of the wharf on the southern shore of the island are the ruins of a Jesuit fort, marked by a monument.

Christian, Hope and Beckwith Islands are often called **The Christian Islands**. They constitute an Indian reserve.

Bar Point is the eastern extremity of the southern peninsula of Christian Island. On it is erected a white circular stone tower 60 feet (18^m3) in height. A wharf on the northern side of the peninsula, off the tower, is in ruins.

The Bar.—The broad bank, under the depth of 3 fathoms (5^m5) connecting the southeast extreme of Christian Island with the mainland, is known as the Bar. Its southwest and irregular edge runs from Stoney Island (*see* page 111) south-

Chart 2283.

eastward toward Gidley Point, while its northern and nearly straight edge trends from the lighthouse tower eastward $1\frac{1}{3}$ miles to the mainland, the western portion rising abruptly from a depth of 10 fathoms (18^m3).

Excepting Campana Shoal and some shoal spots near the mainland, distant a third of a mile, the whole flat is nearly level, and over it 16 feet (4^m9) can be carried. 5

A rock, with only 6 feet (1^m8) of water on it, lies nearly a quarter of a mile southeastward from Bar Point.

Buoy.—A black spar buoy marks the east side of this rock. 10

Campana Shoal, with 10 feet (3^m0) least water on it, is a very dangerous obstruction to the navigation of this channel. The shoal is small and composed of a pile of boulders. It bears 168° , distant one mile from Bar Point.

Buoy.—On this shoal is moored a red and black horizontally-striped spar buoy. 15

Clearing marks.—In the absence of the buoys, the following clearing marks will be found useful in taking this passage:—

The east side of Hope Island in line with Menague Point, bearing 355° , leads eastward of Bar Point Spit.

Variation and Cedar Points in line, bearing 026° , lead southeast of Campana Shoal. 20

Little Island in sight, bearing about 307° , leads southwest of Campana Shoal.

In thick weather or at night do not shoal to less than 20 fathoms (36^m6) off the northwest and southwest sides of Christian Island. 25

The shore trends nearly straight southwestward half a mile from Bar Point, and the detached stones off the shore disappear before Bar Point is reached.

Stoney Island (*Lat. $44^\circ 47'$ N., Long. $80^\circ 10'$ W.*) 5 feet (1^m5) high, so named from the great number of stones surrounding it, lies 200 yards (182^m9) from the coast, to which it is joined by stones, three-quarters of a mile southwest from Bar Point. 30

Little Island, 5 feet (1^m5) high, which from the southeast has the appearance of a boat under sail, is situated $2\frac{3}{4}$ miles northwestward from Stoney Island. The coast between the islands is nearly straight, the 3-fathom (5^m5) line following it at an average distance of 200 yards (182^m9), and passes 100 yards (91^m4) outside the islands. 35

However, there are three detached banks, with 17 to 18 feet (5^m2 to 5^m5) of water over them, spreading $1\frac{1}{4}$ miles northwestward from a point five-eighths of a mile south of Stoney Island. The outer extremes of these banks lies about three-quarters of a mile off, with deep water a short distance off. 40

Hayter Point is situated 3 miles northwestward from Little Island, and between them the coast turns gradually, forming an open bay full of shoal water and stones; the head of the bay is well marked by a bare sand cliff, about 30 feet (9^m1) high. The 3-fathom (5^m5) line is only 200 yards (182^m9) from the northern half of this part of the coast, but from the head of the bay it is distant two-thirds of a mile, with 10 feet (3^m0) close inside it. 45

Quai des Roches is the name applied to a pile of stones lying $1\frac{3}{4}$ miles northward from Hayter Point. Between these is a large open shallow bay, lined with large boulders, which extends also from Hayter Point 200 yards (182^m9).

Chart 2283.

The 3-fathom (5^m5) line skirts this coast at an average distance of half a mile, and very shallow water will be found close inside of it. A rock, with 11 feet (3^m4) of water over it, lies two-thirds of a mile northwestward from Hayter Point and is the outermost shoal off the coast.

Daly Point, the northwest extreme of Christian Island, is situated 1 $\frac{1}{4}$ miles northward from Quai des Roches and 2 $\frac{1}{2}$ miles southwestward from Hope Island; this double point is low and thickly wooded, but half a mile from the end, begins to rise.

10 Between Quai des Roches and Daly Point, the coast is lined with large outstanding boulders, and from the quay itself, they are distant 200 yards (182^m9). A rock, with less than 6 feet (1^m8) of water, lies half a mile northwestward from Quai des Roches, and inside it there is barely passage for a boat.

15 A rock, with less than 6 feet (1^m8) of water upon it, lies 300 yards (274^m3) northwestward from the western prong of Daly Point, and a spit, with 13 feet (4^m0) on its outer edge, makes out northeastward nearly a third of a mile from the eastern prong of the point.

20 A rock, with 15 feet (4^m6) least water on it, lies three-quarters of a mile northward from the latter; as little as 10 feet (3^m0) was reported in this locality, but a diligent search failed to find any trace of such a shoal although the water was very clear.

Clearing marks.—To pass in 19 feet (5^m8) of water, between this rock and the spit from Daly Point, keep Giants Tomb lighthouse touching Motton Point, Beckwith Island bearing 093°.

25 North Watcher Island tree in line with Hardhead Point, Hope Island bearing 060° leads northward of both spit and 15-foot (4^m6) rock.

In thick weather or at night do not shoal to less than 20 fathoms (36^m6) off the northwest and southwest sides of Christian Island.

30 The west side of Christian Island has no very remarkable feature. As before remarked, Daly Point is low. A little south of Quai des Roches a bluff appears and at Hayter Point approaches to within 400 yards (365^m8) of the shore. The bluff here is very steep, about 300 feet (91^m4) high, and almost wholly obscured by trees. Half a mile south of Hayter Point the bluff drops over 100 feet (30^m5), and the island maintains nearly a uniform height to Little Island, where a gradual descent begins, continuing nearly to Bar Point.

Salt Cove, a small boat harbour, lies half a mile southeast of Daly Point, and is the resort of a few fishermen.

Charity Point, the northeastern extreme of the island, lies nearly 3 miles southeasterly from Daly Point.

40 Between these two points is a large bay 1 $\frac{2}{3}$ miles long from the line of the points. Very shallow water fringes the shore of this bay for an average distance of 200 yards (182^m9); the 10-fathom (18^m3) line is distant half a mile from the east and south shores, and a third of a mile from the west side, thus affording anchorage space between the very shallow and deep water, but the shelter from the prevailing winds is not good.

45 The 3-fathom (5^m5) line approaches to within 200 yards (182^m9) of the northeast and north sides of Charity Point, but westward a very shallow bank extends half a mile; the point is fringed with outlying boulders.

Chart 2283.

A bank, with greatest depth of 7 fathoms (12^m8), connects Charity Point of Christian Island to Hope Island, the channel between the 3-fathom (5^m5) lines on either side being three-quarters of a mile wide. While Hope and Christian Islands are connected with each other by a bank, and the latter and the main-land by a bar, Beckwith Island has deep water on all sides. 5

Mayne Point, somewhat resembling Menague Point, lies 1 $\frac{3}{4}$ miles southwestward from Charity Point, and between them is an open bay fronted by shallow water for a distance of a third of a mile, falling steeply to deep water.

Menague Point is a large, high, rounding, well-wooded headland forming the easternmost part of Christian Island, and situated nearly 2 miles southward from Mayne Point and 3 miles northward from Bar Point. The shore between the two points is slightly indented and fronted by shallow water for an average distance of nearly a quarter of a mile. One and a quarter miles southward from Menague Point and northwesterly 2 $\frac{1}{2}$ miles from Bar Point is situated an Indian village, containing churches and several houses. There is a T-shaped wharf at the village, extending out for 315 feet (96^m0); length at face 158 feet (48^m2), with a depth of 9 feet (2^m7) at the face. 10 15

Between the Indian village and Menague Point, the shore trends a little north of east, and is fronted by shoal water for a distance of 250 yards (228^m5). At Menague Point, the bank falls steeply to 10 fathoms (18^m3). 20

Between the village and Bar Point, the coast recedes westward 1 $\frac{1}{4}$ miles from the direct line joining them. Deep water reaches to within 50 yards (45^m7) of the north side of Bar Point, but very shallow water fronts the whole shore of the bay for a distance of over a quarter of a mile, except near the village, where it is only 100 yards wide (91^m4). The shore is sandy, with only a few boulders, and the shallow bank drops quite suddenly to deeper water. 25

Anchorage.—Between the shoal water and the 10-fathom (18^m3) line is a shelf about a third of a mile wide, on which vessels will find good holding ground taking care to anchor far enough out to swing clear of the large stretch of shoal water; the best place is about a third of a mile off the Indian village. 30

Hope Island (Lat. 44° 54' N., Long. 80° 12' W.) is the northern of three large islands lying 18 (15 $\frac{3}{4}$ nautical) miles north of Collingwood, and often called The Christian Islands. Hope Island is densely wooded, and easily distinguishable by its sharp, dark, tree-covered summit near the middle of the north side. This summit, 290 feet (88^m4) high, which can be seen a great distance from the northwest, is only 100 yards (91^m4) from the north coast, to which it falls in a steep cliff, bare of trees. The fall to the south coast is gradual for three-quarters of a mile, when it takes a sudden dip conspicuous from the east. 35

Light.—**Fog signal.**—**Radio beacon.**—The white square wooden tower, with keeper's dwelling attached, together with the fog signal house, are conspicuous objects on the northeast point of the island. From a height of 54 feet (16^m5) is exhibited a *fixed white* light, visible 14 (12 nautical) miles. 40

A fog diaphone sounding 2 blasts every 60 seconds is sounded from the station. 45

A radio beacon is located close to the lighthouse. This beacon and the fog alarm are synchronized for distance finding.

Dry stones extend north from the lighthouse 100 yards (91^m4). A small landing wharf for boats is built on the east side of the island, just south of the lighthouse. 50

Chart 2283.

Hardhead Point is the northwestern point of Hope Island, situated $1\frac{1}{2}$ miles westward from the lighthouse, the shore between being indented by several slight wide open bays, with boulders for some distance from the shore.

- 5 **Lottie Wolf Rock**, with 9 feet (2^m7) of water on it, is the outer shoal spot on a large bank extending nearly a mile from the whole of the north side of Hope Island, and lies three-quarters of a mile, 327° from Hope Island lighthouse; only 18 feet (5^m5) will be found 300 yards (274^m3) northwestward from Lottie Wolf Rock. On the northeast side of the rock, however, 4 fathoms (7^m3) will be found
10 at a distance of 50 yards (45^m7).

Light-buoy.—A light-buoy, painted red, and exhibiting a *flashing red* light is moored about a third of a mile northward of the rock.

Clearing mark.—To pass northeast of this rock, keep Bayly and Motton Points (Beckwith Island) in line, bearing 141° .

- 15 From Lottie Wolf Rock, the 3-fathom (5^m5) line gradually curves so as to pass only 200 yards (182^m9) from the lighthouse.

- Dry boulders encircle Hardhead Point for a distance of 200 yards (182^m9), and a depth of less than 6 feet (1^m5) will be found two-thirds of a mile northward of the point. The 3-fathom (5^m5) line, 200 yards (182^m9) northwest of this
20 shallow bank, runs eastward one mile, whence it turns south leaving a deeper gully just westward of Lottie Wolf Rock. A rock, awash, lies a third of a mile northwestward from Hardhead Point, and its southwest side is steep-to; westward of Hardhead Point the 3-fathom (5^m5) line approaches the coast to within a quarter of a mile.

- 25 **Hoar Point** is situated two-thirds of a mile southwestward from Hardhead Point, the coast between them being nearly straight and fringed with boulders to a distance of 100 yards (91^m4); the 3-fathom (5^m5) line follows the coast and encircles Hoar Point at a distance of 200 yards (182^m9).

- South Point** is situated nearly $1\frac{1}{4}$ miles southeastward from Hoar Point and
30 between them the coast protrudes slightly outside the line of these points. A bank, under the depth of 15 feet (4^m6) extends over a third of a mile from South Point, and a pile of boulders lies 200 yards (182^m9) from the coast, just west of South Point.

- Shoal Point** is situated $1\frac{1}{3}$ miles southward from the lighthouse, and east-
35 ward over three-quarters of a mile from South Point, the bight between the points, a quarter of a mile deep, being known as Sandy Bay.

- Clearing mark.**—To lead southward of all the shoal water from South and Shoal Points of Hope Island, as well as north of the shallow water from Christian Island, keep Giant Tomb lighthouse in line with Motton Point (Beckwith
40 Island) bearing 093° .

- Anchorage.**—Near the middle of Sandy Bay, with Daly Point (Christian Island) just closed behind South Point, bearing 253° , will be found fairly good anchorage in $2\frac{1}{2}$ fathoms (4^m6) over sand. In strong westerly winds, a swell rolls in that makes the anchorage uncomfortable. The 3-fathom (5^m5) line follows
45 the contour of the bay, passing 250 yards (228^m5) from Shoal Point.

- A reef extends in all directions from Shoal Point, particularly toward the east, where a depth of 12 feet (3^m7) will be found close to the edge three-quarters of a mile from the point. Two-thirds of a mile southeastward from the point is a spot on the same bank, with only 10 feet (3^m0) of water on it,
50 gradually shoaling to the point.

Chart 2283.

Clearing mark.—To lead eastward of this reef, keep the extreme of Bar Point (Christian Island) in line with Menague Point, bearing 184° .

Between Shoal Point and the lighthouse, the shore protrudes about 200 yards (182^m9) near the middle and is lined with boulders. The 3-fathom (5^m5) line, after encircling Shoal Point reef, turns southwestward to within half a mile from Shoal Point, trending thence northward to 200 yards (182^m9) eastward of the lighthouse. 5

Anchorage.—If for any reason a vessel wishes to anchor at Hope Island, she will find good anchorage from a quarter to half a mile from the coast between the lighthouse and Shoal Point, in from 3 to 6 fathoms (5^m5 to 11^m0) over sand and mud. 10

The 10-fathom (18^m3) line keeps an average distance of $1\frac{1}{4}$ miles from the north side of Hope Island, two-thirds of a mile from the east side and about half a mile from the northwest and southwest sides. 15

In thick weather or at night, when in the vicinity of Hope Island, do not shoal to less than 20 fathoms (36^m6).

Beckwith Island is the second in size of the three large islands often called The Christian Islands. It is densely wooded, and is almost divided by two bays that are only separated by an isthmus 200 yards (182^m9) wide at one-third its distance from the north end. The northern bluff on the island is 210 feet (64^m0) high to the top of the trees, the southern and main part 317 feet (96^m6). 20

Motton Point is a double point situated 2 miles southeastward from Shoal Point of Hope Island.

From Motton Point the northwest coast of Beckwith Island trends first nearly straight southwestward three-quarters of a mile, then southeastward nearly a mile to the head of the western bay of the island. 25

Off Motton Point, a shallow bank extends 300 yards (274^m3), gradually diminishing in width to the west point which is quite steep-to, but lined with large boulders. In the bay on the west side shallow water makes out 300 yards (274^m3). 30

Faith Point, the southwest extreme of the island, is situated $1\frac{1}{4}$ miles north-eastward from the nearest part of Menague Point (Christian Island) and over $1\frac{3}{4}$ miles southward from the head of the western bay. Large boulders line this coast, and shallow water fringes it for an average distance of 200 yards (182^m9). 35

Variation Point (*Lat. $44^{\circ} 50' N.$, Long. $80^{\circ} 06' W.$*), is situated $1\frac{1}{2}$ miles eastward from Faith Point, the fairly straight coast between extending nearly a quarter of a mile outside the line of the points. Shoal water fringes the coast at an average distance of 200 yards (182^m9). 40

Anchorage.—In a neighbourhood, where the water is so deep, as about the Christian Islands, even limited anchorages are often a great convenience. One of these will be found two-thirds of a mile southwest from Variation Point.

Bayly Point lies $1\frac{1}{4}$ miles northward of Variation Point, and 2 miles south-eastward from Motton Point. 45

The coast between Faith and Variation Points is sandy and covered with small stones, that between Variation and Bayly Points fringed with very shoal water for a distance of 150 yards (137^m2), dropping suddenly to very deep water.

From Bayly Point, the shore first trends nearly straight northwest over three-quarters of a mile to the entrance of the eastern bay. From Motton 50

Chart 2283.

Point, the coast trends nearly straight southward one mile to the head of the same bay, and is lined with large boulders. One conspicuous large boulder lies 50 yards (45^m7) northeast of Motton Point.

- 5 Shoal water extends nearly a third of a mile from the head of the bay, and 250 yards (228^m5) from the stony shore north of it.

In thick weather or at night do not shoal to less than 20 fathoms (36^m6) around Beckwith Island, remembering that this depth on the west side will be found in places within 150 yards (137^m2) of it.

- 10 (*For the description of the coast south of Cedar Point, see page 106.*)

Marks Point is situated 2½ miles northeastward from Cedar Point, the shore between forming a slight bay with shoal water for an average distance of 100 yards (91^m4). The land rises in a gradual slope to a considerable height, and is partly cleared by farms and roads.

- 15 **Thunder Bay** is the name given to the large and nearly circular indentation contained between Marks and Thunder Points, the latter situated 1½ miles southeasterly from Marks Point.

From Marks Point, the shore trends first half a mile southeast, and then south 1¼ miles to the head of the bay, which gradually curves and runs in an easterly direction 1½ miles, then north for one mile to **Thunder Point**. The western shore of Thunder Bay is lined by shoal water for only 100 yards (91^m4), the head for about 200 yards (182^m9), and the eastern shore for half a mile until Thunder Point is approached, whence shoal water lies off only 150 yards (137^m2).

- 25 **Anchorage**, in from 4 to 10 fathoms (7^m3 to 18^m3), may be had anywhere inside Thunder Bay, but exposed to northerly winds.

Wharves.—On the west shore of the bay are a couple of small wharves, at which vessels drawing as much as 8 feet (2^m4) can dock.

The land on the west side and head of the bay rises gradually from the shore and is partly cleared, with a few farm houses. The village of **Lafontaine** is situated southward 3 miles from the head of the bay.

- 30 From Thunder Point the shore trends northeastward 2¾ miles to the northeast extreme of **Methodist Point** forming two very slight bays containing shoal water with outlying boulders, the northeast one having shoal water extending nearly half a mile from the beach. Methodist Point shows up conspicuously from the east and southwest, being more decided as a point and covered with dark trees. Shoal water extends 100 yards (91^m4) from its northwest side, and 200 yards (188^m9) from its northeast extremity.

- 40 From the head of Thunder Bay to Methodist Point, the shore, a quarter of a mile inland, is backed by a high steep bank partly covered by trees and in some places cleared for farming.

Methodist Bay is a small cove southeastward of the point of that name, where limited anchorage for small vessels, and shelter from all but northerly winds may be had.

- 45 **Stoney Point**, not at all prominent, lies 1½ miles southward from, and is the nearest land to, Giants Tomb Island lighthouse. It is also 1¼ miles eastward from Methodist Point, the shore of the bight between being fringed with boulders and shallow water for a distance of 300 yards (274^m3).

- 50 **Sawlog Point** lies over 2½ miles eastward from Stoney Point, the almost straight shore between them being lined with boulders and shoal water for an average distance of 200 yards (182^m9). From Stoney Point, the high land begins to recede, and the rise from the shore becomes very gradual. Sawlog

Chart 2283.

Point is not very prominent, but is important on account of the shoal that makes out in a northerly direction half a mile, where a depth of 18 feet (5^m5) will be found, with 11 feet (3^m4), one-third of a mile from the shore, the ground being rocky and lumpy. 5

Light-buoy.—A red light-buoy showing a *flashing red* light is moored on the north end of this shoal, slightly inside of the 5-fathom (9^m1) line.

Clearing marks.—To lead northward of this reef, keep the south fall of Hope Island in line with Giants Tomb Island lighthouse, bearing 280°, which will lead in 17 feet (5^m2), slightly inside of the light-buoy; or Brebeuf and Beau- 10
soleil Islands leading lights in line, bearing 088°.

Sawlog Bay is the indentation a third of a mile deep between Sawlog and Adams Points, and contains fairly good anchorage, in about 7 fathoms (12^m8), mud bottom. There is a private wharf at the head of this bay, with 10 feet (3^m0) of water at its outer end. 15

Adams Point is the name used for a long portion of shore, the part most deserving the name point being situated 1 $\frac{3}{4}$ miles southeastward from Sawlog Point. From the shore between Sawlog Bay and this point, shoal water, with rocky bottom, extends a distance of one-third of a mile to a depth of 18 feet (5^m5) with 13 feet (4^m0) of water 50 yards (45^m7) inside it. 20

Clearing mark.—To lead northward of this spit, keep the summit of Hope Island open north of Giants Tomb Island lighthouse, bearing 284°.

From Adams Point, the shore gradually turns southward for a distance of 1 $\frac{3}{4}$ miles to Pinery Point.

Pinery Point (*Lat. 44° 50' N., Long. 79° 54' W.*) though not prominent as 25
such, is well marked by a bare sandbank, about 40 feet (12^m2) high extending 200 yards (182^m9) along the shore, the Indian expression for which gives the name of Penetanguishene. A sand flat, having barely a foot (0^m3) of water over it, but very steep-to, has a width of 350 yards (321^m0) at Adams Point, and keeps nearly the same width until abreast of Pinery Point, when it widens to 30
over a third of a mile.

Light-buoy.—A red light-buoy, showing a *flashing red* light, is moored on the east extreme of the shoal extending eastward from Pinery Point.

Hallen Rock, with 14 feet (4^m3) of water on it (in low stages there may be 3 feet (0^m9) less), lies two-thirds of a mile, 138°, from the highest part of Pinery 35
Point, and vessels will pass southeastward of it by keeping **Lafontaine Hill** (not conspicuous in hazy weather) over the asylum, bearing 224°.

Sloane Point is situated 1 $\frac{3}{4}$ miles southwestward from Pinery Point, and the shallow sand bank that skirts the whole shore from Adams Point is, here, only 70 yards (64^m0) wide, whereas between Pinery and Sloane Points, it averages 40
270 yards (246^m8).

Whisky Island, 4 feet (1^m2) high, and very small, is situated a quarter of a mile eastward from Sloane Point. Very shoal water extends from its south point 225 yards (205^m8) and from all other sides 100 yards (91^m4).

Light.—On Whisky Island is erected an iron pole, with a white diamond-shaped daymark, from which is exhibited a *flashing white* light, at an elevation of 27 feet (8^m2). 45

This light, kept in line with the one on the end of Asylum Point pier, bearing 048°, leads through the cut into Penetanguishene Harbour.

Chart 2216.

Penetanguishene Harbour is an excellent sheltered indentation $3\frac{1}{2}$ miles long from the entrance between Michaud Point northwest and Asylum Point to the head of the slightly broader expanse named South Basin. The breadth of the entrance is nearly a third of a mile and that of the remainder averages from one-third to two-thirds of a mile.

A conspicuous landmark in approaching the harbour is the Provincial mental hospital, situated on the high land eastward of the entrance. An aluminium-coloured water-tower is erected on the high land southward of the asylum, about 100 feet (30^m5) in height. It can be seen from northward for about 15 miles, if not obscured by objects in the immediate foreground of the observer. In the early part of last century the site was an important naval and military station.

A large portion of the harbour has natural depths varying from 20 to 10 feet (6^m1 to 3^m0), but a channel abreast the town, and a turning basin off the Esplanade or town wharf are usually kept dredged to a depth of 19 feet (5^m8). In 1950, the available depth was 16 feet (4^m9).

Ice forms about December 1.

Michaud Point (Northwest Point) on the west side of the entrance is situated three-quarters of a mile southwest from Sloane Point and the bight between them, called **Black Bay**, contains a good anchorage in 4 to 8 fathoms (1^m3 to 14^m6) over mud, its shore being fringed by a shallow bank 100 yards (91^m4) wide. Through the bar formerly connecting Michaud Point to the Asylum shore, a channel, 100 yards (91^m4) wide and $19\frac{1}{2}$ feet (5^m9) deep, has been dredged and buoyed, for the leading mark through which *see* page 115.

A memorial cross erected close to shore on this point should not be mistaken for an aid to navigation.

Asylum Point pier.—Light.—A pier extends 100 yards (91^m4) north-westward from Asylum Point. Here is erected a 22-foot (6^m7) iron pole, with a white diamond-shaped daymark, from which is exhibited a *flashing white* light. This in line with that on Whisky Island bearing 048° , leads with $19\frac{1}{2}$ feet (5^m9) of water through the dredged channel above mentioned, marked on the north-west side by two red buoys and the opposite side by one black spar buoy.

Northwest Basin, over one-third of a mile westward from Michaud Point, is shallow, the 3-fathom (5^m5) line reaching only as far as its south point.

Waitabit Point.—From Northwest Basin, the west shore trends southward nearly straight $1\frac{1}{4}$ miles to Waitabit Point, and is clean, excepting the point itself, whence a very shallow spit makes out 100 yards (91^m4).

Buoy.—This spit is marked by a red spar buoy.

From Waitabit Point the shore trends slightly west of south about 550 yards (502^m8) to **Trudeau Point**. A marine slip capable of handling small craft is located here.

The western shore of the harbour rises to a height of about 170 feet (51^m8) in a distance of 200 to 400 yards (182^m9 to 365^m8) from the shore, until abreast of Davidson Point, when the high land recedes; the slope is partially wooded, and close to the water between Northwest Basin and the point is an almost continuous string of small homes.

Penetanguishene, with a population in 1951 of 4,948, is pleasantly situated on rising ground on the eastern side of the southern part of the harbour. It has a Canadian National Railways station, as has also the town of Midland situated a little over two miles distant, although there is no direct railway connection between them. However, there is a regular motor-coach service between the two towns.

Chart 2216.

The town has a good water supply, and all stores necessary for a vessel can be obtained; it contains a good hotel, banks, telegraph office, a hospital, and Canadian National Express Company. The most conspicuous building in the town is the Roman Catholic Church with its two towers.

5

Customs.—Penetanguishene is a port of entry.

Leading lights.—A quarter of a mile from the head of **South Basin**, and southeastward from the mouth of **Copeland Creek** are placed two masts with white diamond topmarks. From the front light, the rear one bears 186° , and is distant 553 feet (168^m6). They each exhibit a *fixed red* light, at heights of 100 and 143 feet (30^m5 and 43^m6), and in line lead into the harbour from Michaud Point to the Government wharf.

10

McGibbon sawmill wharf is situated close southwest of the southern part of Esplanade wharf. A dredged cut, 50 feet (15^m2) wide and 14 feet (4^m3) deep, leads to the wharf from the north. This wharf was reported to be in poor condition, 1949.

15

Esplanade wharf is 1,500 feet (457^m2) long north and south with a slight curve inward at the southern part. A depth of 19 feet (5^m0) can usually be carried to the northern part of it, through a dredged cut already alluded to. A space for turning, 300 feet (91^m4) wide, was dredged to the same depth, abreast this part of the wharf; it is marked by two red spar buoys. (Siltng occurs in the dredged areas, the available depth in 1954 being 18 feet (5^m5). The greater part of the original wharf is in ruins, but the northern portion, 500 feet (152^m4) in length, has been faced with steel sheet piling.

20

Government wharf.—An arm, 200 feet (61^m0) long and known as the Government wharf, projects from the north end of the Esplanade wharf nearly at right angles to this structure; on the north side of the wharf, the berthing length is 523 feet (159^m0). The depth in the berths, 350 feet (106^m7) long on the northern side and 220 feet (67^m1) on the southern side is, when dredging is maintained, 19 feet (5^m8). In the eastern end of the berth on the northern side, the depth is about 12 feet (3^m7).

25

30

A second wharf, 195 feet (59^m4) long, and referred to as the breakwater wharf, projects from the Esplanade wharf, 145 feet (44^m2) southward from the Government wharf and parallel to it. A wharf, 330 feet (100^m6) long, extends southward from the outer end of the breakwater wharf with a depth of 22 feet (6^m7) alongside. Inside this wharf, and attached to the southern side of the breakwater wharf, are two parallel floats, placed 44 feet (13^m4) apart. Small craft moor here. Water and electricity are available.

35

A dredged cut, 50 feet (15^m2) wide and 15½ feet (4^m7) deep, forms a slip at the boathouse 200 feet (61^m0) north of the Government wharf. The least depth in the slip for a distance of 250 feet (76^m2) is 11½ feet (3^m5); the remaining part is very shallow.

40

Tannery Point is three-quarters of a mile north of the Government wharf. A channel, 90 feet (27^m4) wide leading from deep water to the wharf of the Breithaupt Leather Company, Limited, has been dredged to a depth of 19 feet (5^m8).

45

Light.—On the southwest corner of the Government wharf, a *fixed green* light is shown from a pole, at an elevation of 17 feet (5^m2).

Note.—Care should be taken to clear the dangerous submerged crib located on the east edge of the dredged channel 425 yards (388^m6) north of the light on the Government wharf.

50

Chart 2216.

Middle Shelf is a shoal spit, which makes out about 200 yards (182^m9) from Tannery Point, with a depth of 3 feet (0^m9) near its outer edge. This spit is marked by a black spar buoy on the western edge, and a black spar buoy
5 on the southeastern side.

Shehan Point is situated on the east shore of the harbour, nearly one-half mile north of Tannery wharf, and a third of a mile southward from Magazine Island, and may be approached to 100 yards (91^m4).

Magazine Island (Lat. 44° 48' N., Long. 79° 56' W.), 9 feet (2^m7) high,
10 is the only island in the harbour. The island 200 yards (182^m9) long north and south by 70 yards (64^m0) in width and wooded, is situated 300 yards (274^m3) from the east shore and nearly two-thirds of a mile southwestward from the Asylum pier. The water is good on its east and west sides, but from its north end a spit makes out 80 yards (73^m2) to 5 feet (1^m5), and 150 yards (137^m2)
15 to 15 feet (4^m6) of water. From the south end of the island, a spit with 2 feet (0^m6) of water extends 200 yards (182^m9) southward, almost joining a similar spit making out 250 yards (228^m5) from the east shore of the harbour, leaving a narrow passage for a light draught craft.

Buoy.—A black spar buoy marks the shoal water on the west side of
20 Magazine Island.

Clearing mark.—South Basin leading lights, although established primarily to lead through the dredged channel abreast the town, lead incidentally, close westward of the above buoy.

From Shehan Point, the shore trends northerly half a mile to the Asylum
25 pump-house, bending slightly inwards; four hundred yards (365^m8) northward from the same point, a spit with 3 feet (0^m9) least water over it, makes out 250 yards (228^m5) from shore. The 3-fathom (5^m5) line, 100 yards (91^m4) from Shehan Point runs nearly straight to the black buoy west of Magazine Island.

From the pump-house to Asylum Point, the shore trends northward about
30 one-third of a mile with a slight bend outwards.

Northeast Shelf is a wide spit with 10 feet (3^m0) least water over it situated midway between the pump-house and Asylum Point, and with the shoal water extending opposite from Michaud Point, partially obstructs the entrance of the harbour. Northeast Shelf, which projects 325 yards (297^m2) from shore, makes
35 it necessary for vessels to swing off the line of the South Basin leading lights in rounding this shoal point.

Buoy.—A black spar buoy marks the western extreme of Northeast Shelf.

Southward from the Northeast Shelf, the 3-fathom (5^m5) line runs 100 yards (91^m4) from shore to opposite the south end of Magazine Island, when
40 it turns northward skirting the east side of the island.

From the northern edge of Northeast Shelf to Asylum Point light, 400 yards (365^m8), the 3-fathom (5^m5) line lies a little over 100 yards (91^m4) from shore.

The eastern shore of Penetanguishene Harbour is low for some distance from the water, and then rises abruptly, attaining in some places a height of
45 over 200 feet (61^m0); the top of the ridge is generally bare, flat and sandy, except at the Asylum, where boulders displace much of the sand, and the slope is very gradual.

Chart 2217.

Watson and Sucker Creek Points, which with Pinery Point (*see* page 117) may be said to form the outer points of approach to Penetanguishene Harbour, are two projections of the large rounding undefined point situated about 2 miles eastward of the entrance to the harbour. Between, the shore forms a large open bay, with deep water within 50 yards (45^m7) of the land. A quarter of a mile southeast of Asylum pier lighthouse, there is a small coal wharf. The Georgian Bay Country Club, with its conspicuous buildings, stands near the shore one-half mile westward of Watson Point. 5

Beacon.—There is a white beacon on the rounding point one-half mile eastward of Sucker Creek Point. 10

Chart 2201.

Directions.—From a point 2 miles off Cabot Head, the course and distance to the edge of the 20-fathom (36^m6) bank one mile off Hope Island and north-eastward one mile from Lottie Wolf Rock light-buoy, is 113°, 58 (50 nautical) miles, passing 2½ miles southwest of Western Islands. 15

From **Owen Sound**, the course from a point half a mile northward from Vail Point light-buoy to a position 1½ miles north of Hope Island light is 066°, and distance 32½ (28¼ nautical) miles. As this course leads less than a third of a mile northwest of Hope Island Bank (*see* page 114), a vessel should not stand into less than 20 fathoms (36^m6) in the vicinity of The Christians in thick weather or at night. 20

From this position north of Hope Island lighthouse, the course to Bennet Bank light-buoy is 120° and distance 8½ (7½ nautical) miles. At this buoy, the Brebeuf leading lights (Beausoleil Island) will be in line (*see* page 139) and should be steered for, bearing 088° for 3½ miles, when a vessel will be 150 yards (137^m2) northward of Sawlog Point Reef light-buoy. 25

Keep on this range for another 1¼ miles to the line of the Elimere Point leading lights, or, to shorten the run, steer for Gin Island, now 110° for about two miles, when the Elimere Point leading lights should come in the line, bearing 152°. Keep on this latter range until Asylum Point light and Whisky Island light are brought in line, bearing 230°. The vessel should then be about 200 yards (182^m9) northward of the line Lafontaine Hill over the Provincial asylum, bearing 224°. Steer that course, which leads 300 yards (274^m3) southeastward of Hallen Rock, for a little over 2 miles to abreast of Whisky Island. A vessel may then pass close northwest of Asylum Point, and pass through the entrance channel by keeping Whisky Island and the pier light in line astern, bearing 050°, assisted by the three buoys; she will pass westward of the shoal spit called North-east Shelf. 30

By so doing, a vessel will bring South Basin lights four points over the port bow, bearing 186°. Immediately after having passed westward of the line of this range, or when the black spar buoy is on the port bow, the course will be altered southerly, but slowly, so as to round the spit called Northeast Shelf, on west side of Asylum Point. When clear of this spit, the South Basin leading lights will be brought in line again and kept carefully so, especially when in the vicinity of Magazine Island, where their alignment passes less than 100 yards (91^m4) from the island. 45

Having run 1½ miles from the south extreme of Magazine Island, the green light on the northwest corner of the Government wharf should bear about 175°, and should be steered for, care being taken to avoid the submerged crib mentioned on page 119. 50

From **Collingwood** (*Lat.* 44° 30' N., *Long.* 80° 13' W.), the course from a position 1½ miles northward of Nottawasaga light and on the line of the Fisherman Point leading lights, to the buoy marking Campana Shoal (*see* page 111)

Chart 2201.

south of Bar Point, Christian Island, is 021° and the distance $15\frac{1}{2}$ ($13\frac{1}{2}$ nautical) miles. The bar may be crossed, at low stages of water, by vessels drawing not over 14 feet (4^m3), by keeping Variation Point (the right tangent of Beckwith
5 Island) in line with Cedar Point (the left tangent of the nearer mainland), bearing 026° .

When Bar Point lighthouse tower (the light is discontinued) bears about 260° , the bar will be crossed, and the vessel may haul northward passing, half a mile northwest and northward of Cedar Point, and thence steer 051° for Bennet
10 Bank light-buoy (Giants Tomb Island) distant $6\frac{1}{2}$ miles, whence proceed as before directed.

Chart 2283.

Matchedash Bay.—Between Sucker Creek Point and Beausoleil Island, is the entrance to Matchedash Bay, although, locally, the name is only applied
15 to a small shallow bay used by boats and small craft, situated eastward of Waubaushene Village.

Chart 2217.

Midland Point forms the northwest entrance point of **Midland Bay**, and is situated $2\frac{1}{3}$ miles southeastward from Sucker Creek Point, the shore between
20 forming a gradually rounding headland, backed by high and thickly wooded land; excepting a flat making out 200 yards (182^m9) from Sucker Creek, the shore is bold-to within 75 yards (68^m6).

Leading Lights.—Two *fixed white* leading lights are exhibited close northward of Midland Point. The front light, at an elevation of 49 feet (14^m9) from
25 a white square tower, and the rear light, at an elevation of 85 feet (25^m9) from a similar tower, 405 feet (123^m4), 283° , from the front light. These lights in line lead from the Elimere Point range to the Victoria Harbour range for a distance of $2\frac{1}{3}$ miles.

Beacon.—On the rounded point, 2 miles north of Midland Point, is a
30 white slatwork beacon 19 feet (5^m8) high.

Ross Shoal.—One and a quarter miles northward of the Midland Point front light is a depth of 24 feet (7^m3).

Snake Island (*Lat. $44^{\circ} 48' N.$, Long. $79^{\circ} 51' W.$*), about 9 feet (2^m7) high and well wooded, is made up of two parts, the northern being the larger and more
35 important; the combined island lies $1\frac{1}{2}$ miles northeastward from Midland Point, and one mile from the nearest part of the shore. The island is nearly a third of a mile long north and south and 75 yards (68^m6) wide, a bank under 16 feet (4^m9) extending 150 yards (137^m2) northward, and depths under 5 feet (1^m5), 100 yards (91^m4) southward from the southern islet.

40 **Buoy.**—A black spar buoy in 4 fathoms (7^m3) marks the latter.

From Midland Point, the shore trends southwest $1\frac{1}{2}$ miles to the head of a bay, thence half a mile southward to the outer end of the long wharf of the Midland-Simcoe elevator, the shore being fringed with shallow water for an average distance of 75 yards (68^m6).

45 **Midland Bay Shoal**, with 9 feet (2^m7) of water on it, lies 1.1 miles southwestward of Midland Point, and almost directly in the track of vessels bound to Midland. A rock, with 15 feet (4^m6) of water on it, lies 350 yards (320^m0) southwestward of Midland Bay Shoal.

Chart 2217.

Buoy.—A red light-buoy, showing a *flashing red light*, marks the eastern side of Midland Bay shoal.

Clearing mark.—To pass eastward of this shoal, keep the east end of Present Island in line with Midland Point, bearing 026°.

Chart 2211.

Midland, with a population of 7,206 in 1951, is served by the Canadian National and Canadian Pacific Railways and is situated on the southwest side of the bay of the same name. It possesses saw, shingle, flour, textile and planing mills, shipbuilding plants, and four grain elevators in addition to the two at Tiffin; it has also churches of most denominations, public schools, library, and banks. It has daily steamship communication, during the tourist season, with Parry Sound by a steamer of the Georgian Bay Tourist Company of Midland, and occasional connection by boats of other companies, with the principal ports of Georgian Bay and North Channel of Lake Huron. A water tower, on high ground in the southwestern part of the town, is very prominent.

Large quantities of grain are received here from the upper Lake Superior ports and Chicago by vessels, and re-shipped by rail eastward. One of the most conspicuous buildings is the Midland-Simcoe elevator, built on the northwest side of the Bay. The wharf here, trending northeast and southwest, is about 760 feet (231^m6) long, with a depth of about 23 feet (7^m0) alongside. There are no railroad tracks or water main on this wharf. Immediately adjoining the above wharf is the coal wharf of the same company with a length of 1,200 feet (365^m8) with a least depth of about 20 feet (6^m1) alongside. There are railroad tracks on the wharf.

Situated a quarter of a mile southward of the elevator are three mooring piers of the Canadian National Railways, each 33 feet (10^m1) in length, providing a berth 850 feet (259^m0) long, dredged to a depth of 24 feet (7^m3).

The wharf, immediately southward of the above, trends northwest and southeast. On it are erected the three elevators of the Midland Elevator Co. (C.S.L.) At the elevators the depth is 24 feet (7^m3), but at the bend northward it is slightly less.

On the east side of the harbour are three Government wharves with five berths, each 350 feet (106^m7) long, dredged to a least depth of 23 feet (7^m0). The south wharf is equipped with a warehouse, 148 feet (45^m1) long by an average width of 101 feet (30^m8). The north wharf has twin shelters containing office, waiting and baggage rooms and railway tracks.

The Midland Boat Works is situated north of the Government pier. Its pier, extends out 300 feet (91^m4) in a northwesterly direction. The outer 90 feet (27^m4) of it is in poor condition. There is a shed on the wharf. On the south side of the wharf is a marine railway for handling small craft. A larger marine railway on the northern side of the wharf, has a cradle 140 feet (42^m7) long and 28 feet (8^m5) wide, which can take a vessel of 14-foot (4^m3) draught.

Northward of the Midland Boat Works is another Government wharf 220 feet (67^m1) long with a "T" end 100 feet (30^m5) in length. The depth alongside the south side is 18 feet (5^m5).

Midland Shipbuilding Company, northward and contiguous to the above wharf, is on the east side of the smaller bay which is situated on the south side of Midland Bay, and around which the town of Midland is built. The wharf is 980 feet (298^m7) long trending northeastward and its frontage has been dredged to 21 feet (6^m4). but it has one spot of 17 feet (5^m2) alongside.

Chart 2211.

Century Coal Co. coal dock, 400 yards (365^m8) eastward of the above, fronts a portion of the northeastern part of the town. It is 980 feet (298^m7) long and trends nearly east and west. A least depth of 20 feet (6^m1) will be found
5 along the whole of this wharf. The system of loading is expeditious.

Repairs.—Repairs to hull and machinery can be made by the Midland Boat Works and by the Midland Shipbuilding Co.

Supplies.—Coal, provisions etc. and Diesel oil are available.

Customs.—Midland is a port of entry.

10 **Radio station.**—Two prominent masts of the radio station are situated southwest of Tiffin Basin.

Lights.—Two *fixed red* leading lights are exhibited from the hillside in the southwestern part of Midland. The front light at an elevation of 150 feet (45^m7) from a mast, and the rear light from a similar mast, at an elevation of
15 190 feet (57^m9), 560 feet (172^m7), 225°, from the front light. These lights in line lead in from the intersection of their alignment with that of the McNicoll (Elimere Point) range.

A *fixed red* light (privately maintained), is exhibited, from the northeast corner of the Century Coal Co. (C.S.L.) dock.

20 *Charts 2217, 2211.*

The **Wye River** flows into the eastern arm of Midland Bay. Martyrs shrine, erected at Fort Ste. Marie, on this river and one mile from Midland, is one of the outstanding attractions of the district.

Chart 2211.

25 **Tiffin** is the name given to an artificial basin, constructed at the mouth of Wye River, and owned by the Canadian National Railways. It is formed by an earth embankment, extending nearly half a mile northwesterly from the eastern entrance point of Wye River, and almost parallel to the western main shore.

30 The basin is 340 feet (103^m6) wide at the head, 400 feet (121^m9) wide at its entrance and about 2,300 feet (701^m0) long. The basin has been swept to a depth of 24 feet (7^m3).

A wharf runs along the southwestern side, for a distance of 730 feet (222^m5) from the southern corner of the basin, and on it stands the Canadian National Railways elevator.

35 A portion of the eastern bank northward of the wharf, has been dredged to a depth of 21 feet (6^m4) to facilitate turning. The eastern side of the turning basin, and the southern end of the slip are marked by four black spar buoys.

Aberdeen elevator is situated on the same side as the above elevator, but northward and about one-half mile outside of the basin. At its wharf, which
40 is 530 feet (161^m5) in length, the depth is 22 feet (6^m7).

Tiffin leading lights.—On the southwest side of this basin are placed two *fixed red* lantern lights, 151 feet (46^m0) apart, the front elevated 25 and the rear 41 feet (7^m6 and 12^m5) which, in line, bearing 147°, lead to the entrance of Tiffin Basin. These lights are maintained by the Canadian National Railways.

Chart 2217.

Buoy.—A black spar buoy marks the western side of a wreck near the eastern side of Tiffin Bay.

Elimere Point (*Lat. 44° 46' N., Long. 79° 51' W.*), on the southeast side of Midland Bay, is one mile northeastward of Tiffin Basin, the bight between having a shallow bank extending out half a mile, although the point itself is steep-to. 5

Leading lights.—Two *fixed green* leading lights are exhibited close eastward of Elimere Point. The front light at an elevation of 28 feet (8^m5), from a yellow, square tower; and the rear light from a yellow, square steel skeleton tower, at an elevation of 166 feet (50^m6), half a mile 152½° from the front light. These lights in line lead from the Brebeuf to the intersection of their alignment with the Midland range. 10

Light-buoy.—A red cylindrical light-buoy, showing a *flashing red* light, is moored in 5¼ fathoms (9^m1), one cable southwestward of the intersection of the alignments of Brebeuf leading lights (*see* page 139) and Port McNicoll leading lights. 15

Chart 2211

Flat Point, separating Midland and Hog Bays, is a long low flat point bare of trees for some distance from the water's edge, and has a submerged rocky flat extending north 300 yards (274^m3). 20

Buoys.—A red spar buoy is moored on the 5-fathom (9^m1) line northwesterly nearly half a mile off Flat Point. A red spar buoy, equipped with a radar reflector, is moored less than one-half mile northeastward of the same point, and marks the intersection of Midland Point and Victoria Harbour ranges. 25

The shore from Elimere Point to Flat Point trends nearly straight, 1¼ miles, and is fringed by shallow water, for an average distance of 250 yards (228^m5) for the western half, and for a quarter of a mile, as Flat Point is approached.

Chart 2283.

Directions.—Follow the directions given for Penetanguishene (*see* page 121) as long as applicable, continuing on the McNicoll (Elimere Point) range, until the two leading lights close together near Midland Point are abeam, when haul gradually southward at the distance of half a mile from Midland Point until the Midland Town leading lights are in line, bearing 225°. These steered for, at night, assisted in daylight by the east extreme of Present Island in line with Midland Point, bearing 026°, will lead southeast of Midland Bay Shoal, when a berth may be taken up at the town wharves as requisite. If for Tiffin, the McNicoll (Elimere Point) range may be left, when the two lights close together near Midland Point are abeam, and the Aberdeen elevator, bearing 200°, steered for, to the line of the basin leading lights. 30 35 40

Chart 2211.

Hog Bay.—The west shore of this bay trends from Flat Point 3 miles southward, the mouth between Flat and Sturgeon Points being 2¼ miles wide, the bay being nearly V-shaped and shallow.

Chart 2211.

Crescent Island (Lat. $44^{\circ} 46' N.$, Long. $79^{\circ} 48' W.$), small and wooded, is situated two-thirds of a mile southward from Flat Point. Northeastward, one-third of a mile from Crescent Island the depth is only 9 feet (2^m7), and 5 southeastward the same distance from the island lies a rock awash, being the most outlying spots on the extensive shallow flat stretching from Flat Point to the dredged approach to Port McNicoll.

Port McNicoll, situated on the west side of Hog Bay, is the Georgian Bay port of the Canadian Pacific Railway steamships running to Port Arthur and 10 Fort William in Lake Superior. In 1951, it had a population of 884.

The harbour consists of an artificial basin which has been dredged, in a southwesterly direction, a distance of 4,500 feet ($1,371^m6$) inward from the original shore line, and has a width of 600 feet (182^m9). The 3,500-foot ($1,066^m8$) concrete pier along the northwest side of the basin extends 600 feet (182^m9) beyond 15 the outer end of the parallel southeastern pier. The inner end of the basin is only 200 feet (61^m0) in width, as, for a distance of 1,000 feet (304^m8) inward from the inner end of the northwestern pier, that side of the basin converges toward the southeastern side.

On the northwest side are erected two freight sheds, with a total floor surface of about 100,000 square feet. The coal wharf is situated between the two 20 freight sheds. On the southeastern side of the basin is erected the Canadian Pacific Railway grain elevator, having a storage capacity of 4,000,000 bushels.

In 1953, there was a depth of $22\frac{1}{2}$ feet (6^m9) in the basin.

Caution.—It has been reported that in this locality, with strong easterly 25 winds, the water may drop as much as 3 feet (0^m9) in an hour.

The elevation of the top of the elevator wharf is $587\frac{1}{2}$ feet (179^m0) above mean tide New York.

Buoys.—Southeastward, half a mile from Flat Point, is moored a red spar buoy. Westward of the line of the Victoria Harbour leading lights, and about 30 half a mile northwestward of the front light, a light-buoy, showing a *flashing red* light, marks the northwest side, at the entrance, of the channel of approach to Port McNicoll. The southeastern side of this channel is marked by three black spar buoys.

Victoria Harbour.—On the east shore of Hog Bay, a little more than half- 35 way from the head to Bergie Point, is situated the south extremity of a shallow bight one mile wide, and half a mile long, in the northeast corner of which is located the village of Victoria Harbour, having in 1951 a population of 953. The village is a station of the Canadian National Railways.

Wharves.—At the foot of Albert Street is a Government wharf, with a 40 pierhead 60 feet (18^m3) in length; along the face is a depth of 5 feet (1^m5). There is another Government wharf at the foot of Ellen Street 200 feet (61^m0) long including a 50-foot (15^m2) approach. In the berth alongside, extending the whole length of the wharf, is a depth of 13 feet (4^m0). A dredged channel, about 75 yards (63^m6) wide, leads to the wharf with a depth of 12 feet (3^m7). 45 Local knowledge is required to enter the harbour as the channel is not buoyed, and also because there are cribs, which extend southward of the northern side of the channel at a distance of 200 yards (182^m9) from the wharf, which narrow its width somewhat. The harbour is protected by a breakwater extending about 800 feet (243^m8) in a southwesterly direction from the southern part of Bergie 50 Point.

Chart 2211.

Bergie Point, sheltering Victoria Harbour from north winds, is situated $1\frac{1}{2}$ miles southeast of Flat Point, and 2 miles from the head of Hog Bay; it is low, flat, covered with boulders and trees, with shallow water extending westward from it 75 yards (63^m6).

Leading lights.—Two *fixed red* leading lights are exhibited at Victoria Harbour. The front light is exhibited, at an elevation of 27 feet (8^m2) from a white, square tower on Bergie Point; the rear light is exhibited at an elevation of 100 feet (30^m5), from a similar tower, about three-quarters of a mile, 148 $\frac{1}{2}$ ° from the front light. These lights in line lead from the Midland Point range toward the entrance of the channel to Port McNicoll and Victoria Harbour.

Chart 2217.

Directions for Port McNicoll.—Follow the directions given for Midland (see page 125), but continue on the line of the McNicoll (Elimere Point) leading lights, until half a mile southwestward from Snake Island black spar buoy, whence haul eastward with Midland Point leading lights in line astern, bearing 283°. When half a mile northeastward of Flat Point, and with the red conical buoy (see page 125) abeam to starboard, Victoria Harbour leading lights will be seen in line ahead, bearing 148 $\frac{1}{2}$ ° with Port McNicoll light-buoy a little on the starboard bow. Pass 150 yards (228^m5) east of this light-buoy, and steer through the dredged channel to Port McNicoll Harbour, passing northwestward of the three black spar buoys.

Methodist Island, lying midway between Flat and Sturgeon Points, is half a mile long, north and south, by 200 yards (182^m9) in greatest width; rocks, awash, lie along the shore of the peninsula on its western side but good water will be found at a distance of 50 yards (45^m7) from the shore. No important spit makes out from its north point and the south extremity may be approached to 100 yards (91^m4). Eastward 300 yards (274^m3) from the sandy point on the east side of the island is a dangerous reef with a dry rock near the southern end.

Gore Rock, with only one foot (0^m3) of water over it, lies a third of a mile northeastward from the north point of Methodist Island, and is a very dangerous obstruction to the navigation of the passage northward of the island. It lies near the north edge of a large bank, with less than three fathoms (5^m5), having, however, no other such very dangerous spots.

Buoy.—A red spar buoy is moored on the north side of Gore Rock.

Sturgeon Point (Lat. 44° 46' N., Long. 79° 45' W.) marks the southeast limit of navigation of Matchedash Bay for any but shallow draught vessels; the two horns of the point are a third of a mile apart, and between them is a small bay. From Bergie Point, the shore trends eastward a third of a mile, thence straight northeast one mile to the western horn of Sturgeon Point; this shore has no dangerous rocks off it, but not more than 14 feet (4^m3), can be carried between it and Methodist Island.

Sturgeon Bay, a broad V-shaped bay lying between Sturgeon Point and Waubauskene, is 2 $\frac{1}{2}$ miles wide between those places, with about the same length, the shores being fringed with shoal water and marsh, the bank under a depth of 6 feet (1^m5) extending half a mile from the head of the bay. The greatest depth in Sturgeon Bay is 15 feet (4^m6), while a very small area is as deep as 12 feet (3^m7), but all the bottom is mud excepting Middle Ground.

Chart 2217.

Middle Ground, a very shallow bank, in two parts, with a rock, 2 feet (0^m6) high on the southwestern part, has a diameter of three-quarters of a mile, and lies in the western half of the mouth of Sturgeon Bay.

- 5 **Channels**.—Between Sturgeon Point and Green Island (*see* page 134), there is no passage leading to Waubaushene and Port Severn for any but vessels of light draught. For the use of the latter, channels on either side of Middle Ground have been buoyed. The northern channel, narrow and crooked, has a depth of 13 feet (4^m0), and the shallower channel passing west and south of
10 Middle Ground, has a depth of 7 feet (2^m1). The continuation of these channels into Waubaushene Harbour is also buoyed.

Sturgeon River is a very small stream emptying into the head of Sturgeon Bay, and only 3 feet (0^m9) of water can be carried over its bar.

- 15 The village of Sturgeon Bay is situated at the head of the bay, and is on the line of the Canadian National Railways.

Waubashene Village, built upon the south entrance point of what is locally known as Matchedash Bay, is situated 2½ miles southeastward from Sturgeon Point.

- 20 **Wharf and breakwaters**.—The Government wharf is 159 feet (48^m5) long and the berth in front of it and basin extending 200 feet (61^m0) farther to the eastward has a depth of 7 feet (2^m1). There is a breakwater at the mouth of the harbour and another about a quarter of a mile to the southwestward. Alongside the latter is a float 300 feet (91^m4) in length, with a depth of 4 feet (1^m2).

- 25 The channel as far as the highway bridge has been dredged to a depth of 8 feet (2^m4) and is marked by spar buoys.

- Severn leading lights**.—About a third of a mile westward from Waubashene, and known as Severn River range, are erected two masts exhibiting at heights of 20 and 26 feet, (6^m1 and 7^m9) *fixed red* lights visible in the line of the
30 range 2 miles. These two lights in line, bearing 182°, lead from the line of the Waubaushene range towards Port Severn.

- Leading lights**.—On a low island on the northern side of the river entrance, opposite the town and two-thirds of a mile southeast from Long Point, are erected two masts, exhibiting at heights of 18 and 24 feet (5^m5 and 7^m3), *fixed*
35 *red* lights, visible in the line of the range 2 miles. These two lights in line, known as the Waubaushene range, bearing 092°, lead through the narrow channel towards Waubaushene harbour. Waubaushene inner leading lights, *fixed green*, bearing 115°, lead into the harbour.

- Buoys**.—In addition to the above range, red and black spar buoys mark
40 the dredged channel to Waubaushene, the western red buoy being moored three-quarters of a mile westward from Waubaushene wharf.

- Fesserton Village** is situated on the southwest shore of Matchedash Bay and a couple of miles southeast from Waubaushene, both the Canadian National and Canadian Pacific Railways passing through it. A channel 100 feet (30^m5)
45 wide, with a depth of about 10½ feet (3^m2), is dredged from Waubaushene to Carters wharf, excepting at a place about three-quarters of a mile from Waubaushene, where there is a rocky ledge with 6 feet (1^m8) of water on it. This channel is marked by red and black spar buoys.

Chart 2217.

At the village of **Coldwater**, 4 miles upstream from the mouth of the river of the same name, which flows into Matchedash Bay, is a wharf 72 feet (21^m9) in length parallel to the stream, with a depth of 10 feet (3^m0) along the face at low lake stages.

5

Long Point is the name given to the low and partly wooded north entrance point into Waubauskene, the latter being 3 $\frac{1}{4}$ miles long southeast, and 1 $\frac{1}{4}$ miles broad. The nearest part of Long Point is distant a little over a quarter of a mile northwest from the outer and north end of Waubauskene wharf.

Sweet Shoal, a dangerous boulder patch, marked by a red spar buoy, and with 2 feet (0^m6) of water over it, lies about half a mile east of the east end of Green Island.

10

Buoys.—Beacons.—In addition to the Severn range (*see* page 128) from the intersection of its alignment with Waubauskene range the channel to Port Severn is marked by red and black spar buoys and the following wooden day beacons:—

15

Mary Rock, a white beacon with black top, to be left on the port hand entering.

Murray Island, a white beacon with red top, to be left on the starboard hand while entering.

20

Picnic Rock, white beacon with black top, to be left to port entering.

Tug Channel Rock, a white beacon with red top, to be left on starboard hand entering.

This channel has a least depth of 7 feet (2^m1).

Port Severn Village (*Lat.* 44° 48' N., *Long.* 79° 43' W.), nearly 3 miles northward from Waubauskene, is built upon both sides of the mouth of the Severn River. The nearest telegraph office and railway station are in Waubauskene.

The navigation season at Port Severn is from about April 15 to November 15, ice forming about the latter date.

30

Anchorage, over mud bottom, will be found about one-quarter of a mile west of the mouth of the river.

Wharf.—The Trent Canal wharf has a berthing length of 100 feet (30^m5) and depth alongside of 6 feet (1^m8).

A concrete dam and bridge, forming the western terminus of the **Trent-Severn Waterway**, have been constructed across the mouth of the Severn River.

35

Trent-Severn Waterway

The term "Trent-Severn Waterway" is applied to that series of rivers and lakes which, by a system of dams, locks, short artificial channels and two marine railways, provides 8-foot (2^m4) navigation for 89 miles from Lake Ontario to Peterborough and 6-foot (1^m8) navigation for an additional 135 miles to Swift Rapids as well as for 8 miles from Georgian Bay to Big Chute. The intervening 8 miles between Swift Rapids and Big Chute are restricted, by the capacity of

40

the marine railways at these two places, to a draught of 4 feet (1^m2), while the 8-foot (2^m4) navigation between Lake Ontario and Peterborough is subject to the giving of twelve hours prior notice before entering by a vessel of more than 6 feet (1^m8) draught.

5 From the western end of the Bay of Quinte at Trenton, the canal route climbs the Trent river to the eastern end of Rice Lake, rising 367 feet (111^m9) through 18 locks. Midway along the length of Rice Lake, the route enters the Otonabee River, which it follows upward through lock 19 into Little Lake at Peterborough, 8-foot (2^m4) navigation terminating at the lower entrance to
10 lock 19.

In order to avoid the series of rapids through and above Peterborough, an artificial channel four miles long has been cut through the eastern limits of the city. This waterway connects with the river again at Nassau.

Upstream from this section of artificial, excavated channel comes the long
15 chain of the Kawartha Lakes—Katchiwano, Clear, Stony, Lovesick, Deer Bay, Buckhorn, Chemong, Pigeon, Sturgeon, Cameron, and Balsam. These lakes are separated only by very short channels and the rapids or falls through which their surplus water plunges into the level below.

These lakes and the islands which dot them adorn an extensive holiday land
20 with scenic attractions rivalling the Thousand Islands of the St. Lawrence and the Thirty Thousand Islands of Georgian Bay. The Trent-Severn Waterway has made them quite as accessible to the motor launches and pleasure yachts of tourists. Their tributaries to the north reach out a hundred miles through a hundred smaller lakes equally or even more picturesque.

25 Balsam Lake is the summit level of the canal, 598 feet (182^m3) above low water on Lake Ontario and 260 feet (79^m2) above Georgian Bay.

From near the ruins of "The Fort" of fur-trading days, on the western shore of Balsam Lake the canal is cut across low land to the nearest point on the Grass River, a tributary of the Talbot River. A dam on the Grass River creates a
30 small artificial lake, called Mitchell Lake. From this lake, a cutting about three miles long extends to the head of Canal Lake formed by the dammed waters of the Talbot River. In this cutting, near Kirkfield, the second hydraulic lock (No. 36), on the system is located. Its lift is 49 feet (14^m9) and it differs from the Peterborough lock in that the towers supporting the lifting chambers are of steel
35 construction while those at Peterborough are of concrete.

The waterway follows the Talbot River for about nine miles farther and then, to avoid the circuitous river course, follows a straight artificial channel for about three miles to Lake Simcoe.

Lake Simcoe and its northern extension, Lake Couchiching, are controlled
40 by six dams on the three branches of the Severn River which drain the latter lake at Washago, its northern point. From Washago, a two-mile cutting leads northerly to the Severn at the foot of lock 42.

The Severn River flows between picturesque rocky shores and has many deep sections whose raised levels are regulated by the two dams at Swift Rapids and
45 Big Chute. These two dams are not yet provided with locks, but marine railways at each make it possible for launches of not over 15 tons and 4 feet (1^m2) draught to pass, provided they are no longer than 50 feet (15^m2) nor wider than 13 feet 6 inches (4^m1). The difference in water level overcome by the Swift Rapids marine railway is 47 feet (14^m3) while at Big Chute the difference is 58 feet (17^m7).

50 Vessels of 6 feet (1^m8) draught and not over 25 feet (7^m6) beam have access also to the reach beyond Big Chute, through the lock at Port Severn, the Georgian Bay entrance to the waterway.

The draught throughout the waterway except for the marine railway section, is 6 feet (1^m8) but below lock 19, vessels of 8 feet (2^m4) draught can be accommodated. Under present arrangements vessels drawing more than 6 feet (1^m8) on this section below lock 19 are required to give twelve hours notice before entering, as some of its reaches may be drawn down below their standard elevations from time to time for power purposes. 5

As all locks from Lake Ontario to Sparrow Lake (*Lat. 44° 49' N., Long. 79° 23' W.*) are 33 feet (10^m1) wide, the beam of vessels navigating this section may not exceed 32 feet 6 inches (9^m9). Their maximum length, however, depends on their build. Square-built scows are limited to a length of 110 feet (33^m5) but vessels of standard build may be longer. They may be up to 127 feet (38^m7) long if their beam does not exceed 21 feet (6^m4). Vessels 35 feet (10^m7) longer than these lengths may be accommodated up to the lower entrance to lock 19. 10

There are a number of branches diverging from the main channel through the lake portion of the waterway, but the draught on these is variable. The most important branch is the 35-mile Scugog branch from Sturgeon Lake up the Scugog River through a lock at Lindsay and across Lake Scugog to Port Perry. This has 6 feet (1^m8) draught up to Lindsay and 4 feet (1^m2) above that point at normal stages of the river. 15

Water supply for maintaining water levels in the section of the waterway descending towards Georgian Bay is ensured by control of the Lake Simcoe levels. Water levels in the section descending towards Lake Ontario are maintained by water stored in the Kawartha Lakes and in sixty-four other reservoir lakes strategically located on the northern tributaries of the Kawarthas in Haliburton and Peterborough counties. 20 25

TRENT-SEVERN WATERWAY—MILEAGE AND GENERAL DATA

Miles from Trenton	Structure, Locality, etc.	Overhead Clearance		Locks				Canal prism Miles
		Normal	Least re- corded	Length between hollow quoins	Minimum width	Normal draught	Average lift	
		ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	
(Lake Ontario—Mean level, 245·8 above M.S.L.; Standard low water, 243·0 above M.S.L.)								
0·00	Entrance to Bay Quinte							
0·00	Bridge 1—Dundas St., Trenton—Highway swing							
0·36	Bridge 2—Can. Nat. Rys.—Swing							
0·86	Bridge 3—Can. Pac. Ry.—High level	43 4	40 1					0·75
1·74	Bridge 4—Can. Nat. Rys.—High level	30 6	27 3					
1·78	Trenton—Lock 1			175 0	33 0	8 0	17 7	
2·41	Trenton—Lock 2			175 0	33 0	8 0	20 0	
3·67	Bridge 5—Glen Miller—Highway swing							
3·85	Glen Miller—Lock 3			175 0	33 0	8 0	27 0	1·00
5·15	Township of Sidney—Lock 4			175 0	33 0	8 0	18 0	
6·38	Township of Sidney—Lock 5			175 0	33 0	8 0	18 0	0·25
7·26	Frankford—Lock 6			175 0	33 0	8 0	16 0	
7·56	Bridge 6—Frankford—Highway swing							1·75
8·01	Emergency dam							
13·82	Glen Ross—Lock 7			175 0	33 0	8 0	10 0	0·50
13·85	Bridge 7—Glen Ross—Highway swing							
13·86	Emergency dam							
13·96	Bridge 8—Can. Nat. Rys. Swing							

TRENT-SEVERN WATERWAY—MILEAGE AND GENERAL DATA— *Continued*

Miles from Trenton	Structure, Locality, etc.	Overhead Clearance		Locks				Canal prism
		Normal	Least re- cord- ed	Length between hollow quoins	Mini- mum width	Normal draught	Aver- age lift	
		ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	Miles
25-26	Township of Seymour—Lock 8.....			175 0	33 0	8 0	19 7	.....
26-41	“ “ “ 9.....			175 0	33 0	8 0	16 0	1-25
27-99	“ “ “ 10.....			175 0	33 0	8 0	24 0	.....
								0-75
29-68	Ranney Falls—Locks 11 and 12 in flight			175 0	33 0	8 0	48 0	
29-74	Emergency dam							
29-75	Bridge 11—Highway swing							
30-69	Bridge 12—Can. Nat. Rys.—Bascule..							1-00
30-77	Bridge 13—Can. Nat. Rys.—High level	28 8	27 8					
31-13	Bridge 14—Campbellford—Highway bascule							
32-17	Township of Seymour—Lock 13.....			175 0	33 0	8 0	23 0	.....
								0-50
33-70	“ “ “ 14.....			175 0	33 0	8 0	25 0	.....
33-72	Emergency dam							
33-16	Heely Falls—Lock 15.....			175 0	33 0	8 0	21 9½	.....
36-18	Bridge 15—Highway swing							
36-51	Heely Falls—Locks 16 and 17 in flight..			175 0	33 0	8 0	54 0	1-00
36-56	Emergency dam							
37-11	Bridge 16—Heely Falls, Highway swing							
43-38	Bridge 17—Trent Bridge, Highway swing							
51-13	Hastings—Lock 18.....			175 0	33 0	8 0	9 0	.....
51-16	Bridge 18—Highway swing							
51-17	Emergency dam							
51-95	Bridge 19—Can. Nat. Rys.—swing							
57-00	Entrance to Rice Lake							
69-00	Mouth of Otonabee river							
76-53	Bridge 20—Bensfort—Highway swing							
80-35	Bridge 21—Hale's Highway swing							
88-74	Peterborough—Lock 19.....			134 0	33 0	6 0	8 0	.....
88-83	Bridge 22—Highway swing							
88-94	Bridge 23—Can. Nat. Rys.—Swing							
89-51	Peterborough—Lock 20.....			142 0	33 0	6 0	12 0	.....
89-61	Bridge 24—Maria St.—Swing							
89-72	Bridge 25—Can. Pac. Ry.—Swing							
90-10	Peterborough—Lock 21—Hydraulic lift.....			140 0	33 0	6 0	65 0	.....
90-58	Bridge 26—Norwood Road—High level	23 8	22 9					
90-58	Guard gate							
91-01	Bridge 27—Warsaw Road—Highway swing.....							3-50
91-01	Guard gate							
93-25	Guard gate—Nassau							
93-33	Bridge 28—Can. Nat. Rys.—Swing							
93-38	Bridge 29—Nassau—Highway Swing							
94-25	Township of Douro—Lock 22.....			142 0	33 0	6 0	14 0	.....
								0-25
94-84	“ “ “ 23.....			142 0	33 0	6 0	12 0	.....
96-38	“ “ “ 24.....			142 0	33 0	6 0	12 0	0-25
97-29	“ “ “ 25.....			142 0	33 0	6 0	10 0	.....
98-72	Lakefield—Lock 26.....			142 0	33 0	6 0	15 8	.....
99-00	Bridge 30—Lakefield—High Level....	23 6	20 6					
99-04	Guard Gate—Lakefield.....							0-50
104-45	Bridge 31—Young's Point—Highway swing							
104-47	Young's Point—Lock 27.....			175 0	33 0	8 10	7 3	.....
104-49	Guard Gate—Young's Point							
112-87	Burleigh Falls—Flight Lock 28.....			150 0	33 0	6 0		
	“ “ “ 29.....			134 0	33 0	6 0	24 0	.....
113-00	Bridge 32—Burleigh Falls—Highway swing							

TRENT—SEVERN WATERWAY—MILEAGE AND GENERAL DATA—
Continued

Miles from Trenton	Structure, Locality, etc.	Overhead Clearance		Locks				Canal prism
		Normal	Least re- cord- ed	Length between hollow quoins	Mini- mum width	Normal draught	Aver- age lift	
		ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	Miles
114-75	Lovesick—Lock 30.....			134 0	33 0	6 0	3 6	.....
120-66	Buckhorn—Lock 31.....			134 0	33 0	6 0	11 6	.....
120-66	Bridge 33—Buckhorn—Highway swing							0-25
132-68	Bridge 61—Bridgenorth, Chemong, Lake—Rock Causeway with steel swing span				Branch (Chemong Lake)			
130-17	Bridge 34—Gannon's Narrows—Float- ing bridge with floating swing span							
138-17	Bridge 35—Bobcaygeon—Swing							
138-21	Bobcaygeon—Lock 32.....			175 0	33 0	6 0	5 5	0-25
138-23	Guard gate							
148-00	Sturgeon Point							
156-19	Bridge 65—Wellington Street, Lindsay —Highway bascule				Branch (Sturgeon Lake to Port Perry)			
156-31	Bridge 66—Lindsay Street—fixed.....	13 0						
156-35	Lindsay—Lock.....			142 0	33 0	6 0	7 0	
157-20	Bridge 67—Can. Nat. Rys.—High level	31 0	29 2					
157-87	Bridge 68—Ops—Highway fixed span...	10 0	8 6					
183-00	Port Perry							
153-61	Fenelon Falls—Flight Lock 33.....			150 0	33 0	6 0		
	“ “ “ 34.....						23 7	0-50
153-61	Bridge 36—Highway swing			134 0	33 0	6 0		
153-98	Bridge 37—Can. Nat. Rys.—Swing							
157-17	Rosedale—Lock 35.....			175 0	33 0	6 0	4 0	1-00
157-19	Emergency dam							
158-00	Bridge 38—Rosedale—Highway swing							
158-10	Entrance to Balsam Lake							
(Balsam Lake—Summit level, 841-0 above M.S.L.)								
163-91	Guard gate—Balsam Lake							
165-24	Bridge 39—Victoria Road—Highway swing							
166-80	Bridge 40—Portage Road—High level	23 7	22 9					
167-88	Guard gate							
167-98	Bridge 41—Can. Nat. Rys.—High level	23 4	22 8					6-00
169-26	Guard gate—Kirkfield							
169-36	Kirkfield—Lock 36—Hydraulic lift....	24 10	24 1	140 0	33 0	6 0	49 0	
172-98	Bridge 42—High-level arch.....	28 1	26 6					
175-23	Bridge 43—Bolsover—Highway swing							
176-65	Bridge 44—Boundary Road—Highway swing							
177-04	Township of Thorah—Lock 37.....			142 0	33 0	6 0	21 8½	6-0
178-05	Township of Mara—Lock 38.....			142 0	33 0	6 0	14 0	
179-07	Bridge 46—Kane's—Highway swing							
179-63	Township of Thorah—Lock 39.....			142 0	33 0	6 0	13 0	
180-09	“ “ “ 40.....			142 0	33 0	6 0	14 0	3-0
180-74	“ “ “ 41.....			142 0	33 0	6 0	11 6	
180-79	Bridge 47—Gamebridge—Highway swing							
181-70	Bridge 48—Can. Nat. Rys.—High level	22 8	21 10					
181-85	Bridge 49—Can. Nat. Rys.—Swing							
182-15	Bridge 50—Lakeshore Road—Highway swing							
182-20	Entrance to Lake Simcoe							

TRENT—SEVERN WATERWAY—MILEAGE AND GENERAL DATA—
Concluded

Miles from Trenton	Structure, Locality, etc.	Overhead Clearance		Locks				Canal prism
		Normal	Least re- cord- ed	Length between hollow quoins	Mini- mum width	Normal draught	Average lift	
		ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	Miles
	(Lake Simcoe Level—718.3 above M.S.L.)							
197-56	Bridge 51—Atherley road—Highway swing							
197-66	Bridge 52—Can. Nat. Rys.—Atherley Narrows—Swing							
208-24	Bridge 54—Muskoka Road—Highway swing							
209-14	Bridge 55—Can. Nat. Rys.—Washago Swing							
209-87	Guard Gate Couchiching							
209-89	Couchiching—Lock 42			175 0	33 0	7 0	20 3	3-0
209-90	Bridge 56—Couchiching—Highway high-level	31 0	28 7					
212-73	Bridge 57—Hamlet—Highway swing							
222-40	Bridge 58—Can. Nat. Rys.—Ragged Rapids—High-level	34 0	32 8					
224-45	Swift Rapids Marine Railway			(60 0	13 6	4 0)	47 0	
228-07	Bridge 59—Can. Pac. Ry.—Severn Falls—High level	33 7	33 2					
232-45	Big Chute—Marine Railway			(60 0	13 6	4 0)	53 0	
240-55	Port Severn—Lock			100 0	25 0	6 0	12 0	
240-55	Bridge 60—Port Severn—Highway swing							
240-56	Entrance to Georgian Bay							
	(Lake Huron—Mean Level, 580.6 above M.S.L. Standard low water 578.5 above M.S.L.)							
	Total							33-25

The depth of water on lock sills varies with prevailing water levels. The depths at locks opening on Lake Ontario, Lake Simcoe and Georgian Bay have been as low as the following during the navigation season:—

Lock 1, Trenton	.....7'4"	on October 28, 1934.
Lock 41, Gamebridge	.....7'0"	on August 30, 1941.
Lock 42, Couchiching	.....7'8"	on October 17, 1929.
Lock at Port Severn	.....6'2"	on August 21, 1926.

Note:—For navigation charts of the Trent-Severn Waterway, see Volume I.

Chart 2283.

Green Island is the largest of a number of islands lying near the mouth of Severn River. The northwestern of the continuous reefs, extending a mile north-west from Green Island, lies also $3\frac{3}{4}$ miles southeastward from Present Island. From this extremity, the group including **Canary Island** is $2\frac{1}{3}$ miles long, north-westerly and southeasterly, and two-thirds of a mile in greatest width.

A narrow channel, marked by buoys and beacons and with a least depth of 8 feet (2^m4) leading to Port Severn, lies between Potato and Green Islands. From a point about a third of a mile west of Potato Island, this channel divides and a buoyed channel leads to the southwestward across Hill Bank and the other channel, also buoyed, leads northwestward about 1,000 feet (304^m8) off Moore Point.

Chart 2283.

Turning Rock.—Light.—On Turning Rock, situated 350 yards (320^m0) westward from Canary Island, and nearly $1\frac{1}{4}$ miles east of the western horn of Sturgeon Point, is erected a white square wooden tower surmounted by a red lantern, which from an elevation of 30 feet (9^m1), exhibits a *flashing white light*, 5 visible 7 (6 nautical) miles. The light is unwatched.

Moore Point (Lat. $44^{\circ}49'$ N., Long. $79^{\circ}48'$ W.), the southeast entrance point of a large bay full of dry and submerged rocks, is a portion of the mainland, and on account of its dark colour is very prominent. The northern half of a line joining Moore and Flat Points marks the northwest edge of a large area of foul 10 ground.

Present Island is situated 2 miles westward of Moore Point. It has a maximum length of two-thirds of a mile east and west, is very irregular in shape, and its greatest breadth is 300 yards (274^m3). The western part of the island is wooded, while the southeastern extreme is low and almost bare. A summer 15 estate is maintained by the owner of the island.

A sandflat extends westward half a mile from the island, where will be found a depth of 18 feet (5^m5), only 6 feet (1^m8), however, will be found at half that distance. From the south side of the island, a shoal flat makes out 200 yards (182^m9), and from the northwest side 100 yards (91^m4). **Langmuir Rock**, 20 awash, lies on the bank a third of a mile southeastward from the east extreme of Present Island. A series of shallow banks and rocks runs almost continuously in a straight line $2\frac{1}{4}$ miles easterly from Present Island to Moore Point, making navigation in the vicinity extremely hazardous.

Buoy.—A red spar buoy is moored about 4 cables westward of Present 25 Island, near the outer edge of the 3-fathom (5^m5) contour.

Directions.—Bound to Waubaushene or Port Severn, in a vessel of light draught, follow the directions for Port McNicoll and Victoria Harbour until three-quarters of a mile southward of Candlemas Shoal buoy (Beausoleil Island), when haul eastward from the McNicoll (Elimere Point) range, and steer a 30 course of 116° for 6 miles, passing 200 yards (182^m9) northward from Gore Rock red spar buoy, to abreast Sturgeon Point, eastward of which the master of a vessel should not proceed without local knowledge.

Vessels of heavier draught bound for Port McNicoll or Victoria Harbour can also pass between Snake and Present Islands, by leaving Elimere Point range 35 when a quarter of a mile south of Candlemas Shoal buoy. Steer thence 125° , with the north point of Methodist Island ahead and Pinery Point sand cliff astern, for 4 miles, until the Victoria Harbour leading lights are in line, whence proceed as before directed.

Currents.—Masters of vessels navigating Georgian Bay, between Moose 40 Point and Bar Point lighthouse tower, are cautioned against relying too rigidly upon their courses and distances, as during the sounding of the deep water north of Hope Island, round the Westerns, and westward of Christian Island, strong currents were sometimes felt even in calm weather.

Quarry Island is a large well wooded island lying $2\frac{3}{4}$ miles eastward from 45 the south point of Beausoleil Island, and northwestward $1\frac{1}{2}$ miles from Moore Point. Although it cannot be reached by vessels of large draught, it is conspicuous on account of its distance from the shore and its very dark appearance.

The island, nearly elliptical in shape, is three-quarters of a mile long in a northwest direction and half a mile in greatest breadth. 50

Chart 2283.

The whole ground, between Quarry and Present Islands, is filled with a few dry granite rocks, and very shoal water. A depth of perhaps 14 feet (4^m3) might be carried through were it necessary.

- 5 **Buoys.**—Three spar buoys indicate a channel for small craft across this shoal area. A black spar is moored on the west side of the channel, about 500 feet (152^m4) 090° from the southeast extreme of Present Island; a red spar on the east side of the channel about 8,500 feet (2,590^m8) 096° from the south extreme of Beausoleil Island; and a black spar on the west side of the channel, about
10 8,500 feet (2,590^m8), 084° from the same point.

Beausoleil Island is 5 $\frac{1}{4}$ miles long in a north and south direction with a maximum width of 1 $\frac{3}{4}$ miles. The northern half is so masked by other islands and rocks, and borders a channel that can only be used by small craft, that it has not been surveyed.

- 15 This island has been set aside as a National Park. A white sign "NATIONAL PARK," about 10 feet (3^m0) high has been erected on the west shore, about 1 $\frac{1}{2}$ miles north of the southern extremity of the island. On the eastern shore a similar sign is built onto the sloping side of the clearing
20 "NATIONAL PARK-BEAUSOLEIL ISLAND". Both of these signs are visible several miles.

- A log house for the use of the park ranger is situated on the site of the former Indian village. Several small wharves have been built along the eastern shore, some with 11 feet (3^m4) of water alongside. Trails have been cut across the densely wooded island, and between the various summer camps recently estab-
25 lished. Boulders, painted white, mark the ends of the trails on the western shore. Camp-sites with stoves have been cleared at the end of the trails.

- The east coast of Beausoleil Island trends from its south point northeastward two-thirds of a mile, thence northerly three-quarters of a mile to the point north of the former Indian village, all of it being sandy and fringed by a shallow
30 sandbank a third of a mile broad.

- This locality is a conspicuous feature, and about 15 acres of uncultivable land is cleared round it. Westward of it the island attains an elevation of 113 feet (34^m4), probably the highest part, although a bluff further north appears higher on account of its trees. Although navigable water is to be found for some
35 distance north of the village, a stranger should not proceed northward of the rocks joining it to Roberts Island.

Buoys.—A red and a black spar buoy are moored eastward of the former Indian village.

- Anchorage.**—A vessel will find good holding ground in a large area off the
40 sandbank fronting the east side of Beausoleil Island. The space is 1 $\frac{3}{4}$ miles long north and south, by two-thirds of a mile in least width, contained between the island sandbank and the shoals northeast of Present Island.

- From the south point of Beausoleil Island, situated one and three-quarter miles southeastward from Pinery Point, the very shallow sandbank, with 4 feet
45 (1^m2) of water on its outer edge, makes out southeasterly over two-thirds of a mile, being separated from the sandbank west of Present Island by a channel a third of a mile wide and 4 $\frac{1}{4}$ fathoms (7^m6) deep.

- Candlemas Shoal**, with less than 6 feet (1^m8) of water over it, lies a third of a mile southward from the south point of Beausoleil Island, being just separated
50 from the island sandbank.

Chart 2283.

Light-buoy.—A black cylindrical light-buoy, showing a *flashing white* light, is moored on the southwest side of the shoal and close eastward of the McNicoll (Elimere) range. It is equipped with a radar reflector.

Clearing Marks.—The Gap (Giants Tomb Island) in line with Adams Point, bearing 322° , leads southwest. Flat Point in line with the north end of Snake Island, bearing 135° , leads also on the same side of Candlemas Shoal. 5

From the south point of Beausoleil Island, the west coast trends northwestward three-quarters of a mile, thence northward nearly straight $2\frac{3}{4}$ miles to abreast Brebeuf Island light, and the west bank from the island has a width of about 300 yards (274^m3) for a distance of $1\frac{1}{2}$ miles when it widens and encircles the Gin Islands. The whole of the west coast is fringed with huge boulders, none, however, lying very far off, but causing very bad landing. 10

Roberts Island, $1\frac{2}{3}$ miles long northeast and southwest, by two-thirds of a mile in average width, is situated with its south end northeastward, distant 2 miles from the south end of Beausoleil Island. The island is only thinly wooded. Its coast is irregular, indented by small bays, and fringed by numerous rocks. 15

Turning Rock is flat and one of a number lying about half a mile off the southeast point of Roberts Island, and in the entrance to the channel to Honey Harbour. 20

Light.—From a square steel skeleton tower on a shoal eastward of Turning Rock, (Lat. $44^\circ 51' N.$, Long. $79^\circ 50' W.$), a *flashing white* light is shown at a height of 14 feet (4^m3). The tower carries white slatwork on the sides facing the channel.

Big Dog Channel, between Little Beausoleil and Roberts Islands, has been dredged $24\frac{1}{2}$ feet (7^m4) wide, to a depth of 7 feet (2^m1). 25

Channel to Honey Harbour.—This channel has its entrance about half a mile south of the southeastern point of Roberts Island. It is approached by passing between the light-buoy marking Candlemas Shoal and the red spar buoy moored off the western end of Present Island. The channel has been improved as far as Honey Harbour to a depth of $9\frac{1}{2}$ feet (2^m8) at the lake datum of 578.5. 30

Buoys.—Beacons.—Directions.—A boat-type fairway buoy, painted with black and white vertical stripes, and showing a *flashing white* light, is moored $1\frac{1}{4}$ miles southwestward of Turning Rock light. The entrance to the channel is marked by a red and black spar buoy, moored about 6 cables northeastward of the fairway buoy. 35

After passing the entrance buoys, the course is run eastward on two white slatwork beacons in line, located on the east shore of what is locally known as **Tobies Bay**. A red and a black spar buoy mark this section of the channel. This course is followed to abreast the black spar buoy moored about 800 feet (243^m8) eastward of Turning Rock. It then turns northward for about one-half mile and is marked by two red and two black spar buoys. The channel then changes direction to northwestward and passes between a point of Roberts Island and a small island on the east side with a summer cottage on it. The narrow channel here is marked by two black and one red spar buoys. From here the channel swings to eastward, and directly to, 400 yards (365^m8) ahead, a wharf, boat-house and store, situated on a small island about 150 feet (45^m7) off Pic Nic Island. Near the south corner of the wharf is a rock and the submerged remains of a former wharf. 45

Chart 2283.

Pic Nic Island is well wooded and is the largest island in the passage, between Roberts Island and the mainland. The width of the whole channel at this point is about 200 yards (182^m9) but it is limited to less than a 100-foot
 5 (30^m5) breadth, between the head of the wharf and a small rock lying off it, on which a cottage is built.

From the wharf at the small island about 150 feet (45^m7) off Pic Nic Island, as stated above, the course continues northward and leads midway between two rocks, lying about 300 feet (91^m4) above the wharf. The passage between the
 10 rocks is less than 100 feet (30^m5) in width. The western has upon it a white beacon and the eastern one, almost directly opposite, a red beacon. This stretch of channel is further marked by a black spar buoy, moored a short distance southwestward of the Government wharf at Honey Harbour.

Honey Harbour is a point of call for local steamers, and is much frequented
 15 by fishing parties, tourists, and yachtsmen. There is a post office and steamer connections with Midland, Parry Sound and intervening points. There are a number of summer hotels in the locality. The Delawana Hotel stands near the Government wharf on a point of the east mainland shore. The Royal Honey Harbour Hotel is on **Island No. 12**, on the opposite side of the channel. There
 20 is a private wharf here, with a depth of 6 feet (1^m8) at the face. Provisions and gasoline are available at Honey Harbour, and repairs to small boats are made.

Government wharf.—This wharf is “L” shaped; along the outer face, 151 feet (46^m0) in length, is a depth of 9 to 14 feet (2^m7 to 4^m3). It is the terminal of a gravel road to the village of Severn at the Georgian Bay entrance to the
 25 Trent-Severn waterway, a distance of 10 miles.

The channel between the mainland and Island No. 12 is marked by spar buoys. It leads into the water feature known as Honey Harbour. Branching off the latter are two arms, each 3 to 4 miles long, and known, respectively, as North and South Bays.

South Bay (Lat. 44° 53' N., Long. 79° 47' W.), east of Honey Harbour, gives access by canoe and portage route to inland lakes and the Trent-Severn waterway via one of these called Crooked Lake. **North Bay**, entered north of the inner end of the harbour, also gives access by the same means to the same district.

Proceeding northward beyond Island No. 12, the channel passes between Little Beausoleil Island to westward and Deer Island to eastward. The channel, marked by spar buoys, and dredged to a depth of 8 feet (2^m4), is at one place only 25 feet (7^m6) wide. On **Ardiluan Island**, off the northern shore of Beausoleil Island, a *flashing white* light is shown from a white triangular slatwork beacon.
 40 It is passed close-to on the port hand. Thence to Kindersley Island, the channel trends northwesterly to pass between Penetang Rock and Hotchkiss Rock. Proceeding in a more northerly direction, Gull Rock is left to port and the course shaped to pass about 1½ cables eastward of the light on Kindersley Island. (see page 149.)

Note.—A red spar buoy, moored about one cable southeastward of Kindersley Island, is left to port. It serves to indicate the passage across the spit extending southeastward from the island to Gull Rock.

The track from Kindersley Island to Townsend Island is indicated on Chart No. 2283. For description see page 149.

*Chart 2283.**Continuing Northward from Beausoleil Island:*

Gin Islands, two in number, lie off the middle of the west coast of Beausoleil Island, and are both small, and 14 feet (4^m3) high. They lie 250 yards (228^m5) east and west of each other, and there is no safe passage, except for small boats, between, nor east of them, nor between them and Osprey Bank. A rock, with 8 feet (2^m4) of water on it, lies 100 yards (91^m4) from the north side of the western Gin Island; otherwise the water on the west, northwest and south sides is deep. A rock, with 14 feet (4^m3) of water lies a third of a mile southwest from the western Gin Island. 5 10

Buoy.—A black spar buoy, fitted with a radar reflector, is moored on the western edge of this rock.

Clearing mark.—The whole of Snake Island open southwest of Beausoleil Island, bearing 146°, leads southwest of this rock.

Gin Rocks (*Lat. 44° 51' N., Long. 79° 53' W.*), two in number and very small, lie southward from the western Gin Island; the northern one, 3 feet (0^m9) high, lies on the bank fronting Beausoleil Island, one-third of a mile from shore and a quarter of a mile from the western Gin Island. The southern and smaller rock, only half a foot out of water, has deep water all around it, and is distant half a mile from the same island, and one-third mile from shore. 15 20

Osprey Bank is 1½ miles long north and south, the southern part being two-thirds of a mile broad; its north end is situated half a mile westward from Brébeuf Island light, and its south extremity a quarter of a mile northward of Gin Islands. On the northern half of the bank are several spots, with less than 6 feet (1^m8) of water on them. 25

Clearing mark.—The southwest side of Beausoleil Island, bearing 152°, well open southwest of western Gin Island, leads southwest of Osprey Bank.

Brébeuf Island, small, partially wooded, about 20 feet (6^m1) high, and nearly circular, lies 1½ miles north of Gin Rocks. The island is rendered conspicuous by the lighthouse upon its light-coloured bare west side, which the sun usually brightens up, contrasting it with the rest of the shore. It is connected eastward with Beausoleil Island (distant nearly half a mile) by a string of dry rocks and shoals; from Brébeuf Island, very shoal water extends 200 yards (182^m9) in all directions. 30

Leading lights.—Two *fixed white* leading lights are exhibited. The front light, at an elevation of 40 feet (12^m2), is exhibited from a white, square tower on the northern side of Brébeuf Island; the rear light, at an elevation of 87 feet (26^m5), is exhibited from a red, square steel skeleton tower, on Beausoleil Island, about half a mile, 088°, from the front light. The lights in line lead from Bennet Bank light-buoy to the alignment of the McNicoll (Elimere Point) leading lights. 35 40

Coast.—A rock, with 15 feet (4^m3) of water on it, lies a quarter of a mile northwestward from Brébeuf Island, with which exception, the water is good in the bay between Brébeuf Island and the rocks and islands north of it.

Giants Tomb Island, no doubt derives its name from the appearance of the highest part, as seen from The Westerns, when usually the hill, appearing to rise suddenly from the water, resembles a huge tomb. The Tomb itself lies 45

Chart 2283.

rather southwest of the middle of the island, but about equidistant from each shore. To the top of the trees, it is about 250 feet (76^m2) high, and rather flat. The rest of the island is quite low, but wooded, the northern part appearing to
 5 have less heavy timber and to be lower than the southern part.

The island has an extreme length of 3 $\frac{3}{4}$ miles in a southwesterly and north-easterly direction, with a greatest width of 1 $\frac{1}{4}$ miles abreast The Tomb. Shallow water fringes the northeast point for more than 200 yards (182^m9) in a northerly direction, and a third of a mile northeastward.

10 From the northeast point of Giants Tomb Island, the northwest shore trends in a general southwest direction 2 $\frac{1}{4}$ miles to **Parker Point**, the whole shore being fringed with large boulders and shoal water, making landing impossible in the slightest surf.

From Parker Point, the coast trends southwesterly two-thirds, and then
 15 southeasterly 1 $\frac{1}{4}$ miles, to the lighthouse.

The coast from Parker Point to the lighthouse is fringed with large boulders for a distance of 50 yards (45^m7) and the shallow bank outside them is only 100 yards (91^m4) wide.

The Gap divides a part of the northeast end of the island a third of a mile
 20 in length, from the main and southwest portion. The northwest entrance to the Gap cannot be used, on account of the numerous boulders, but from the south-east it may be entered by very light draught boats, and a nice well sheltered boat cove found on the northern side (at low stages this eastern entrance is sometimes dry). Outside the fringe of boulders on the northwest side is a very
 25 shallow flat extending 200 yards (182^m9) on an average, when it drops off suddenly to deep water. There are no outlying shoals on this side of Giants Tomb Island.

Southwest Harbour is a small boat cove on the west coast used by fisher-
 men only, whose huts show up on the shore. Its entrance, 200 yards (182^m9)
 30 wide, is situated nearly a mile northward from the lighthouse. The cove is about 200 yards (182^m9) square, and 6 feet (1^m8) of water may be carried in. A large marsh nearly connects South West Harbour with the east coast of the island.

Light.—A lighthouse stands upon the south end of Giants Tomb Island
 about 200 feet (61^m0) from the shore. The white, square, wooden tower is
 attached to the keeper's dwelling, and from a height of 40 feet (12^m2) shows a
 35 *flashing white* light, visible 12 (11 nautical) miles. Giants Tomb Island light-
 house bears from Hope Island lighthouse 107°, distant 8 $\frac{1}{4}$ (7 $\frac{1}{4}$ nautical) miles.

A spit with 9 feet (2^m7) of water near the outer edge, makes out a third of a
 mile southwestward from Giants Tomb Island lighthouse.

Bennet Bank has two shoal spots, one with 8 feet (2^m4) of water on it near
 40 the western edge, and the other 9 feet (2^m7) near its northern edge. The bank is connected to the island by a flat, having less than 3 fathoms (5^m5) of water. The shoalest spot is nearly two-thirds of a mile west from the lighthouse, and the bank projects southwest from it 200 yards (182^m9) to the depth of 15 feet (4^m6).

A rock, with 15 feet (4^m6) of water upon it, lies 150 yards (137^m2) southwest
 45 from Bennet Bank.

Light-and-bell-buoy.—A buoy, marking the southwest end of Bennet
 Bank, is moored inside the 10-fathom (18^m3) line in a position almost one mile
 241° from Giants Tomb lighthouse, and on the alignment of the Brébeuf leading
 lights. It is painted black, and shows an *occulting green* light.

Chart 2283.

Clearing mark.—To pass south of this rock, Bennet Bank and the shoal water from Giants Tomb Island, keep the leading lights at Brébeuf Island in line bearing 088°.

In thick weather or at night, when approaching Giants Tomb Island from the northwest, the master of a vessel should not shoal to less than 20 fathoms (36^m6) until certain of his position. 5

Raft Point, on the eastern side of the island, is situated 1½ miles northeastward from the lighthouse. The lighthouse point trends 200 yards (182^m9) eastward, then gradually sweeps around in a gentle curve forming a wide open bay between it and Raft Point. The shore of the bay is fronted with a very shallow sand flat 250 yards (228^m5) broad, with less than 6 feet (1^m8) over it, dropping suddenly to deep water, the 10-fathom line (18^m3) in one place being only 50 yards (45^m7) outside the one-fathom line. Southeast of the lighthouse point, the water is deeper, 2 fathoms (3^m7) being found 50 yards (45^m7) from the shore. 15

The shore from Raft Point to the Gap is a series of wide open bays and small points, all fringed by such shallow water over sand, for an average distance of 300 yards (274^m3), that landing is difficult.

Anchorage.—The best anchorage, eastward of Giants Tomb Island, is between Raft Point and the Gap in a depth of 7 to 10 fathoms (12^m8 to 18^m3), half a mile from the island. 20

Turtle Rock (Lat. 44° 53' N., Long. 79° 58' W.), is 10 feet (3^m0) high and small, lying half a mile eastward from the northeast end of Giants Tomb Island, and is surrounded by shoal water.

Eshpabekong Island is a large, almost bare island lying about midway between Giants Tomb and Townsend Islands. The main island has a few bushes on it, and is 31 feet (9^m4) high, but is only one of a long string, the northwest islet of which lies easterly 1¼ miles from the northeast end of Giants Tomb Island. From this islet, the string runs southeastward 1¼ miles, being 150 yards (137^m2) wide at the widest part. Lying in a large gap between the northeast shore and Giants Tomb Island, Eshpabekong Island is a conspicuous object but otherwise unimportant, as no vessel, can approach to within two-thirds of a mile of it without a number of buoys or ranges. No passage was discovered between Turtle Rock and Eshpabekong Island, nor between the latter and the northeast shore. 25 30 35

Indian Belle Rock, with less than 6 feet (1^m8) of water over it, is a very important danger for vessels bound either to Muskoka Mills or to the southeast; it bears 077°, and is distant 2½ miles, from Giants Tomb Island lighthouse, and 222°, distant 2¾ miles, from the Whalesback. It lies also three-quarters of a mile from Minos Bank, with 10 fathoms (18^m3) of water between them. 40

A small, narrow bank, lies 350 yards (320^m0) northwestward from Indian Belle Rock. The least depth on it is 16 feet (4^m9).

Clearing marks.—The south extreme of Beausoleil Island touching Adams Point, bearing 132°, leads southwest from Indian Belle Rock.

The northeast extremes of Southeast Wooded Pine and Giants Tomb Islands in line, bearing 339°, leads close west of the same. 45

Between Indian Belle Rock and Giants Tomb Island, the depth ranges from 7 to 13 fathoms (12^m8 to 23^m8).

Chart 2283.

Minos Bank is nearly elliptical in shape, the longest diameter being nearly a mile and the shortest half a mile in length. The bank has four spots, with less than 6 feet (1^m8) over them, the southern of which and therefore nearest the main
5 channel lying 1 $\frac{3}{8}$ miles northward from Adams Point and, bearing 086°, distant 3 $\frac{7}{8}$ miles from Giants Tomb Island lighthouse.

There are no dangers between this bank and Sawlog and Adams Points, although the bottom is uneven.

Between Indian Belle Rock and Minos Bank are two shoal spots; one with
10 18 feet (5^m5) of water over it, bearing 073° over one-third of a mile from Indian Belle Rock, and the other, more extensive, with 19 feet (5^m8) least water over it, 116°, distant half a mile from the same rock.

Southeast of Minos Bank is another shoal about one-third of a mile long, north and south, with a least depth of 24 feet (7^m3) on its northeast edge, and
15 situated 1 $\frac{1}{2}$ miles north of Adams Point, and one-third of a mile north of the alignment of the Brébeuf leading lights.

Fraser Bank, extensive and shallow, is nearly pear-shaped with stalk toward the north; it is 1 $\frac{1}{4}$ miles long and two-thirds of a mile in greatest width, and its north end with depth of 6 feet (1^m8) is situated 1.1 miles southwestward
20 from the Whalesback, and 1 $\frac{1}{2}$ miles northeasterly from Indian Belle Rock.

Bakewell Rock, with 10 feet (3^m0) of water on it, lies 200 yards (182^m9) southeast of the beacon range, leading to Whalesback Channel (*see below*) and bearing 024°, a little over one mile from Indian Belle Rock, and 1 $\frac{3}{8}$ miles southwestward from the Whalesback; the rock is small, and really only an out-
25 lying one from Fraser Bank to which it is joined.

Boucher Rock, with only 4 feet (1^m2) of water on it, is a very dangerous rock lying only 200 yards (182^m9) northwest of the range, and, bearing 246°, distant 1.1 miles from the Whalesback. Another rock, with only 7 feet (2^m1) of water on it, lies 140 yards (128^m0) northeast from Boucher Rock. Another rock,
30 with 3 fathoms (5^m5) of water on it, lies on the range of beacons 1.1 miles from the Whalesback beacon. The ground northwest of this is all foul, there being no passage that can be described or recommended without buoys. A rock, with 16 feet (4^m9) of water on it, is situated on the range nearly three-quarters of a mile from the Whalesback beacon. Another spot, with 18 feet (5^m5) least
35 water on it, lies 100 yards (91^m4) southeastward from the last. A rock, with 11 feet (3^m4) least water on it, lies half a mile southwestward from the beacon, but being a third of a mile southeast from the track is not very important.

Myrtie Bank is situated with its shoalest part, awash, three-quarters of a mile southwest from the beacon. The spot is near the northeast corner of the
40 bank, and from it the bank extends westward nearly a quarter of a mile to 16 feet (4^m9) of water, southward 300 yards (274^m3) to 12 feet (3^m7), and south-eastward, 200 yards (182^m9) to 7 feet (2^m1). The northwest part of the bank, with 16 feet (4^m9) of water on it, approaches the range to within 200 yards (182^m9).

The Whalesback, a bare rock 10 feet (3^m0) high, 100 yards (91^m4) long and quite narrow, having steep sides and a round top, is situated one-third of a mile southwestward from Ava Island, and is the most northerly of a group of islands and rocks forming the southwest side of Whalesback Channel. The group has an average width of 200 yards (182^m9), the northeast side having
45 very deep water close to it. The Whalesback itself has deep water all round
50

Chart 2283.

it, and may be approached to 10 yards (9^m1); the southwest side of the group, not being likely to be required for navigation, had no detailed survey made thereof.

Beacon.—On the Whalesback is erected a tall pyramidal beacon painted white, to mark the entrance to the channel of that name (*see below*). 5

Governor Island lies half a mile southeast from the Whalesback group and a little less than that distance, southwest from Gull Rock; the island is crescent-shaped, concave to the north, the distance between the horns being nearly three-quarters of a mile, the bay enclosed being of no use, though it appeared deep. The east and south sides are steep-to. Two rocks lie, respectively, 200 yards (182^m9) and a quarter of a mile northwestward from the northeast horn of Governor Island, the former with 4 feet (1^m2) and the latter with 18 feet (5^m5) water on it. 10

Whalesback Channel, 1½ miles in length, is the name given to the stretch from the Whalesback to Gull Rock; shoal water was reported in the middle of this channel, but with the exception of a rock, with 18 feet (5^m5) of water, between the Whalesback and Kindersley Island, no shoal water was discovered after a careful survey. 15

Keating Island (Lat. 44° 54' N., Long. 79° 55' W.), lying close to the south side of Governor Island, is small. Two dry rocks lie 100 yards (91^m4) eastward from the east end of Keating Island, and a bank, with 12 feet (3^m7) of water on it, extends nearly a quarter of a mile southeast from the south side of the island to a depth of 15 feet (4^m6). 20

The ship's track passes between this bank and a shoal spit from Minnicoganashene Island. 25

Buoy.—A black spar buoy marks the south edge of the channel abreast of the middle of Smooth Island.

Smooth Island protects Minnicog Channel on the southwest. It lies with its northwest sharp point a quarter of a mile southwest from Keating Island. The island is thinly wooded, about 20 feet (6^m1) high, a little more than three-quarters of a mile long in a northwest direction, and 350 yards (320^m0) in extreme width. The northeast side is nearly straight and the southeast end made up of several small rocks. 30

There is no safe passage for vessels between Keating and Smooth Islands. Dry rocks stretch off from the northwest point of Smooth Island in a northwesterly direction nearly half a mile, and rocks, awash, lie nearly three-quarters of a mile further in the same direction. Shoals continue still further nearly to the track from the southwest to Whalesback Channel. 35

While it is hardly true to say there are no channels through the above shoals, still there is no channel that can be recommended without the aid of buoys and beacons. One such channel leading from the south end of Giants Tomb Island has been marked out by leading beacons, and that is the only one used at present. (*For its description, see pages 146 to 148*). 40

Minnicoganashene Island, lying nearly a quarter of a mile southeast from Governor Island, is a large conspicuous island in the approach to Muskoka Mills, having upon its summit a conspicuous summer hotel and other buildings. It is 60 feet (18^m3) high, but the trees add greatly to that. The island has the shape of an irregular right-angled triangle, the right angle being at the southwest point. The north point is situated a third of a mile southward from Gull Rock, and its greatest length north and south is three-quarters of a mile. 45 50

Chart 2283.

The northwest side of the island is indented with several shallow coves. The south coast is only slightly indented with a shallow bay, while the east coast is nearly straight, but of little importance, there being no channel near it.

5 The northwest and channel side is quite steep-to, as is also the sharp north point.

From the southwest point, a shallow rocky spit makes out in a northwesterly direction 300 yards (274^m3) to 12 feet (3^m7) of water, with only 5 feet (1^m5) half-way. This spit, taken in conjunction with the bank from Keating Island (*see above*), narrows the channel to 150 yards (137^m2), with a depth of 6 fathoms (11^m0), but as vessels using this channel do not draw more than 11 feet (3^m4) the passage is quite wide enough.

Buoy.—A red spar buoy is moored west of the above spit.

Alice Rock is very small and about 5 feet (1^m5) high, lying in **Minnicog Channel** (as the stretch of water from Governor Island to Mohawk Rock is called) and nearly a quarter of a mile northward from the southeast end of Smooth Island.

A rock, with only 5 feet (1^m5) of water on it, lies 80 yards (73^m2) eastward from Alice Rock, compelling vessels to keep the islet lying near the south side of Minnicoganashene Island very close on board, this portion of the south coast of the island being steep-to. A vessel can pass close southwest of Alice Rock but the former passage is always used.

Buoy.—A black spar buoy marks a shoal in mid-channel lying east of Alice Rock.

Skylark Rock, about 4 feet (1^m2) high, is about 150 yards (137^m2) long northwest by 75 yards (68^m6) broad, and is the northwesternmost of the string extending from Beausoleil Island toward Smooth Island.

A bar, over which not more than 11 feet (3^m4) can be carried (in low stages there may be $3\frac{1}{2}$ feet (1^m1) less) and which should not be crossed by a stranger, extends from Skylark Rock to Smooth Island.

Leading lights.—Two *occulting white* leading lights are exhibited on the south end of Minnicoganashene Island.

The front light is exhibited at an elevation of 25 feet (7^m6) from a lantern on a white pyramidal beacon; the rear light is exhibited at an elevation of 50 feet (15^m2), from a similar structure, 004° , 500 feet (152^m4) from the front light.

35 The lights in line lead over the deepest part of the bar.

Buoys.—Two black and two red spar buoys mark the channel north of Mohawk Rock.

A narrow channel exists between the two small island lying close north of Mohawk Rock. This passage is often used by small craft running to Muskoka Mills, with a doubtful saving of distance. As the passage is so shallow, and the channel very little used, no detailed description will be given; the track is shown on chart 2283. A string of rocks joins Skylark Rock to the southeast part of Minnicoganashene Island, and, did traffic warrant the placing of buoys, a passage could be had through them.

Mohawk Rock, with 6 feet (1^m8) of water on it, lies a quarter of a mile southward of the east end of Smooth Island, and is the central one of a string of small rocks lying south of that island, and extending in a northwest direction nearly half a mile; the southeast end of the string has 10 feet (3^m0) of water, and

Chart 2283.

the northwest extremity 15 feet (4^m6) of water, on it. A shallow spit connects Mohawk Rock with the small island to the northeastward and no ship channel exists among the rocks composing the string stretching nearly three-quarters of a mile southeastward to Beausoleil Island. However, a passage, navigable by boats drawing 5 feet (1^m5) or less, exists between Beausoleil Island and the larger of the small islands off it.

Muskosh Channel is the name given to the passage leading from Gull Rock to Muskoka Mills distant nearly 4 miles, and it is possible to carry thither a depth of 5 fathoms (9^m1). The islands and rocks on the southeast side will be first described.

Talbot Islands are a group of four well-wooded islands, 20 feet (6^m1) high, having deep water off their northwest, north and northeast sides. The northwest islet of the group lies 350 yards (320^m0) northeastward from the north point of Minnicoganashene Island. The group is over a third of a mile long in a southeast direction and 300 yards (274^m3) wide. A small rock, one foot (0^m3) high, lies 100 yards (91^m4) from the east side of the group.

Hotchkiss Rock, 2 feet (0^m6) high, lies over a third of a mile northeastward from the north point of Minnicoganashene Island. It is very small and may be approached to 25 yards (22^m9).

A slightly larger rock, 13 feet (4^m0) high, lies 200 yards (182^m9) southeastward from Hotchkiss Rock, and, it too, is surrounded by deep water.

Penetang Rock, 11 feet (3^m4) high, so called from the fact that the smaller craft using the passage east of Minnicoganashene Island on their way to Penetanguishene leave the main ship's track here. The rock lies a quarter of a mile northeastward from Hotchkiss Rock, and between them is 10 fathoms (18^m3) of water. Penetang Rock may be approached to within 50 yards (45^m7). It is the west rock of a group of islands and rocks 150 yards (137^m2) wide, stretching a quarter of a mile eastward from it. The islands are 18 feet (5^m5) high, fairly well wooded, and may all be approached to 50 yards (45^m7) on all sides.

Lambart Island, 70 feet (21^m3) high, nearly square, with indented sides and about a quarter of a mile in diameter, is situated 1 $\frac{2}{3}$ miles northeastward from Minnicoganashene Island. Between Lambart and the Penetang Rock group is the entrance, with 12 fathoms (21^m9) of water in it, to a boat channel (*see* page 137) leading round the north and east sides of Beausoleil Island, to Midland and Penetanguishene. There is said to be about 6 feet (1^m8) of water through, but the survey was not extended to that locality. Deep water will be found to within 50 yards (45^m7) of the island.

Bather Island (Lat. 44° 55' N., Long. 79° 53' W.), 32 feet (9^m8) high with only some burnt trees, and rampikes left on it now, is situated over three-quarters of a mile northeast from Penetang Rock. It is about 200 yards (182^m9) in diameter with a small dry rock lying 100 yards (91^m4) from its northwest side, and another 50 yards (45^m7) from its south side. No shoal water was found lying off these. It is separated from Lambert Island by a channel 100 yards (91^m4) wide.

Ship Island, is 150 yards (137^m2) long north and south and quite narrow, with a considerable number of trees on it. It lies half a mile northward from Bather Island and 300 yards (274^m3) from the nearest dry rock off Arthur Island. Between Bather and Ship Islands, the shore is high, steep and partially wooded, being only 100 yards (91^m4) back from the line of the islands. South 200 yards (182^m9) from Ship Island is a small rock, with 10 feet (3^m0) of water on it, lying 100 yards (91^m4) from the shore.

Chart 2283.

Sugar Island, small, 15 feet (4^m6) high, lies half a mile northward from Ship Island and 100 yards (91^m4) from the shore of Bone Island. Close southward of the island is a small dry dock, and 100 yards (91^m4) further in the same direction is a small rock, with 5 feet (1^m5) of water on it. A good passage exists east of Sugar Island, and on the west side the island and dry rock may be approached to 25 yards (22^m9).

Anchorage.—A bay, a quarter of a mile long, runs in eastward from Sugar Island, and in it good anchorage may be had.

Bone Island, over 70 feet (21^m3) high at its northwestern end, forming the south shore of the bay on which Muskoka Mills village (now practically deserted) is built, is situated with its northwest point two-thirds of a mile northward from Sugar Island. The bay south of this point has as much as 14 fathoms (25^m6) of water in it, and eastward of Conns Shoal it is deep.

From the northwest point of Bone Island, the south coast first trends southeasterly a third of a mile, and then northeasterly two-thirds of a mile, forming the north shore of a long bay about 200 yards (182^m9) wide and deep. The shore between Sugar Island and this bay is quite clean.

A small spit makes out about 75 yards (68^m6) from the northwest point of Bone Island to a depth of 13 feet (4^m0). From the same point, the northwest coast trends 300 yards (274^m3) northeastward and then eastward two-thirds of a mile to the most northerly point of the island; the intervening space being taken up with a bay 200 yards (182^m9) long from the line of the points.

Gwetchewan Island, about 75 yards (68^m6) in diameter, is a round wooded island lying near the middle of the mouth of the bay just mentioned, and has deep water off it. From the north point of Bone Island, the coast trends southeasterly one-third of a mile, further than which the survey was not taken.

A rock, with 17 feet (5^m2) least water on it, lies 250 yards (228^m5) northeastward from the north point of Bone Island, being situated on a bank otherwise over 5 fathoms (9^m1) deep making out from an island, 7 feet (2^m1) high, 350 yards (320^m0) east of the shoal.

In the bay south of Muskoka Mills depths from 10 to 20 fathoms (18^m3 to 36^m6) will be found.

The northwest side of Muskosh Channel will now be described:

Gull Rock, 4 feet (1^m2) high, lies two-fifths of a mile north of the northern extremity of Minnicoganashene Island and is the outer of three rocks running from the southeast point of Kindersley Island; it is 100 yards (91^m4) long north-west, and quite narrow. There is very little shallow water on its southwest, south, and east sides, but no deep passage exists between it and Kindersley Island. A rock, with 6 feet (1^m8) of water on it, lies 350 yards (320^m0) westward from Gull Rock, and, standing out well into Whalesback Channel, must be guarded against.

McLeod Island is well wooded, the trees making it show up dark and conspicuous from all directions from which it can be seen. It is situated half a mile northeastward from Gull Rock and a third of a mile southeast from Pudding Island, and is 300 yards (274^m3), long east and west, by 100 yards (91^m4) in greatest width. Some dry rocks lie 300 yards (274^m3) off its south side, and from the most southerly of these a bank extends southeastward 150 yards (137^m2) to a depth of 15 feet (4^m6). A rock, with 7 feet (2^m1) of water on it, lies 150 yards (137^m2) southwestward from the southwest point of McLeod Island.

Chart 2283.

McLeod Island and its rock mark the end of a large group of islands and rocks separating Muskoka Landing Channel from Muskoka Channel.

Buller Island, 19 feet (5^m8) high, and small, is situated 200 yards (182^m9) northeast of McLeod Island. It is wooded, and shows up conspicuously after rounding McLeod Island. Buller Island forms the southeast entrance point of a bay that runs northwestward nearly one mile from it. This bay has a nearly uniform width of 200 yards (182^m9) and limited, but good anchorage may be had in it, in 4 to 7 fathoms (7^m3 to 12^m8). From the northwest end of the bay, a boat channel, known as Freddy Channel, runs to Muskoka Landing. Buller Island has deep water close to its east and north sides.

Manitou Point is the name of a rather high and nearly dry bare flat point lying just north of McLeod Island. It forms the southwest shore of the long bay and anchorage alluded to in the last paragraph. It is also the southeast end of an island over a mile in length, the northwest end of which is known as **Wabend Point**.

Beacon.—On the southwest side of this island, and nearly half a mile southward from Wabend Point, is erected a beacon, painted white, which in line with a similar beacon on a rock on the northwest side of Ava Island (*see* page 150), bearing 053°, leads out from the Whalesback to Giants Tomb Island with 16 feet (4^m9) of water (in low stages there may be 3½ feet (1^m0) less).

Portage Point, one-quarter of a mile northeast of Manitou Point, is the narrow southeast end of Portage Island the southwest coast of which forms the northeast side of the anchorage above alluded to. The island north and south is nearly 1½ miles long by two-thirds of a mile in extreme breadth. Deep water approaches quite close to the east, southeast, south, and southwest sides of Portage Point.

A shoal, with 13 feet (4^m0) least water on it, lies a third of a mile south-eastward from Portage Point.

Wabeck Island (*Lat.* 44° 56' N., *Long.* 79° 54' W.), about 40 feet (12^m2) high and wooded, is just separated on its northwest and west sides from Portage Island. Its southeast point is situated over half a mile northeastward from McLeod Island. The island is pear-shaped, the butt being toward the northwest in which direction it is nearly half a mile long by nearly a quarter of a mile in greatest breadth. The southeast and only important point of the island has deep water 50 yards (45^m7) from its south, southeast and east sides.

Anchorage.—Among the islands, lying between Minnicoganashene Island and Muskoka Mills, anchorages are scarce on account of deep water and narrow channels, but southeast of Wabeck Island is a large bank under 10 fathoms, (18^m3) and good anchorage in any desirable depth can be had on it. Care must be taken to avoid the shoal of 13 feet (4^m0) just described.

Arthur Island, is situated nearly a mile northeastward from McLeod Island, is very irregular in shape, a quarter of a mile wide north and south, and half a mile long east and west. The island is about 50 feet (15^m2) high, and thickly wooded except the eastern or higher half which has been partially burned. There is a channel between it and Wabeck Island, but it is narrow and crooked, the western point of Arthur Island being separated from both Portage and Wabeck Islands by a distance of 200 yards. (182^m9). From the south point of the island dry reefs extend southeastward 200 yards (182^m9).

Chart 2283.

Otonabee Shoal, with 7 feet (2^m1) of water on it, lies 100 yards (91^m4) southeast from the outer reef above mentioned, and is the most awkward danger in Muskosh Channel. At this point the channel is only 300 feet (91^m4) wide.

- 5 **Delasco Island**, about 20 feet (6^m1) high, small and thinly wooded, lies close northward of the northeast point of Arthur Island. Shallow water connects the two, and a spit, with a small dry rock on it, makes out northward 100 yards (91^m4) to a depth of 12 feet (3^m7), but the east side is quite steep-to.

- 10 **Conns Shoal**, with 10 feet (3^m0) least water on it, lies northwesterly a little more than a quarter of a mile from Delasco Island, and another, with 9 feet (2^m7) least water on it, lies a little less than a quarter of a mile northwestward from the same island.

- 15 **Sweatman Island**, high and thickly wooded with dark pines, lies nearly half a mile northwestward from Delasco Island. It is 300 yards (274^m3) long in a northwest direction by 100 yards (91^m4) in width. A small rock, 10 feet (3^m0) high, lies 75 yards (68^m6) from its south point. Deep water approaches close to both this rock and Sweatman Island.

- 20 **Mitawangah Island** lies with its northeast point three-quarters of a mile northward from Delasco Island. It is 65 feet (19^m8) high the top being nearly bare while the lower part is fairly well wooded. It is a third of a mile long northeasterly by 150 yards (137^m2) wide. Deep water approaches close to its north and southeast sides.

- 25 **Freddy Channel** (See page 151), branches off from the ship's track at this island and runs almost in a straight line $2\frac{1}{3}$ miles to Muskoka Landing Channel. (see page 149). The narrow eastern section is buoyed.

- 30 **Brown Bay**, of which the north point of Mitawangah Island may be said to be the southwest entrance point, extends three-quarters of a mile in a northwest direction. The bay has only an average width of 200 yards (182^m9) with 13 fathoms (23^m8) of water at the entrance, but about the middle good though limited anchorage may be had in from 5 to 7 fathoms (9^m1 to 12^m8).

Brown Head is a prominent headland forming the northeast entrance point of Brown Bay, and situated a mile northward from Delasco Island. The channel between Brown Head and Bone Island is only 200 yards (182^m9) wide, but the water is 9 fathoms (16^m5) deep and the shores clean.

- 35 **Longuissa Point** is well marked by a large conspicuous red house (1929) 250 yards (228^m5) from the extreme point, situated a third of a mile northeast from Brown Head. The point is almost 60 feet (18^m3) high, bare, with deep water close to it.

- 40 **Longuissa Bay**, long and narrow, runs in half a mile on the southwest side of the above point, but is too narrow for anchorage. A small rock, one foot (0^m3) high, is situated 350 yards (320^m0) southwestward from Longuissa Point, with very deep water between them.

- 45 The northeast side of Longuissa Point trends in a northwesterly direction half a mile forming the west shore of the bay upon which Longuissa village was built. Cribwork upon which to pile lumber was built nearly all along the shore.

- 50 **Wales Rock**, with only 7 feet (2^m1) of water in it, lies 200 yards (182^m9) northward from the extreme of Longuissa Point and 75 yards (68^m6) eastward from the south end of the cribwork. Vessels approaching the cribwork should be careful to avoid it.

Chart 2283.

The wharf, in connection with the mill, at which 12 feet (3^m7) of water (at low stages there may be 3½ feet (1^m1) less) may be had, is situated on the north shore of the bay half a mile northeastward from Longuissa Point. From the wharf, the north shore of the bay trends west nearly half a mile being all cribbed to give piling ground for the product of the mill. 5

Longuissa Village (Muskoka Mills) is situated on Muskoka River at its entrance into Georgian Bay and 14½ (12¼ nautical) miles by the steamer channel northward from Penetanguishene.

From the village, the shore runs southward nearly a quarter of a mile and then eastward nearly half a mile to Clifton Bay, with deep water close in all the way. The point thus formed is quite bare, 70 feet (21^m3) high. 10

Directions for Muskoka Channel.—In this channel, the master of a vessel is advised to follow the track marked on the chart, as the water is all deep and shoals scarce, the principal ones to avoid being Otonabee Shoal, the 5-foot (1^m5) rock south of Sugar Island, Conns Shoal, and Wales Rock. 15

Muskoka Landing Channel is the name given to that part of Inside Channel between Townsend Island and Hotchkiss Rock (*see* page 145). Townsend and Newton Islands, forming the entrance points from the northwest, are clean outside a distance of 50 yards (45^m7). This channel will now be described. 20

Kindersley Island, 22 feet (6^m7) high, situated half a mile northwestward from Gull Rock, is close southeast of Ava Island. It is a quarter of a mile long in a northwest direction and narrow; it is only sparsely wooded, but is rather conspicuous by reason of its light colour. Small, dry rocks, and a rock, with 13 feet (4^m0) of water upon it, will be found 100 yards (91^m4) off its northeast side. A rock, lies close west of its northwest point; and between this rock and Ava Island will be found a narrow channel through which a depth of 11 feet (3^m4) can be carried, with the assistance of buoys. 25

Light.—A *flashing white* light is exhibited, at an elevation of 20 feet (6^m3), from a lantern on a white triangular beacon on the southeast point of Kindersley Island. 30

Pudding Island (*Lat.* 44° 55' N., *Long.* 79° 54' W.), 10 feet (3^m0), high is a very small island bare of trees lying nearly two-thirds of a mile northward from Gull Rock and about one-third of a mile northeastward from Kindersley Island. It has a dangerous spit extending 150 yards (137^m2) southeastward, where will be found a depth of 5 feet (1^m5). Between Glacis and Pudding Islands are two larger well-wooded islands, but being lower and further from the track, are less important. 35

A rock, awash, lies 200 yards (182^m9) southwest from Pudding Island, and is connected by slightly deeper water with a reef lying 100 yards (91^m4) northwest of the same island. A small islet, 15 feet (4^m6) high, lies 300 yards (274^m3) southeast from Pudding Island, and a shoal, with 7 feet (2^m1) least water on it, lies 250 yards (228^m5) south from it. 40

Glacis Island, 19 feet (5^m8) high, is a very small island, well wooded, with a steep bare western face. It is situated a third of a mile northwestward from Pudding Island. Shoal water stretches from Long Point Island nearly across to Glacis Island, which is itself steep-to on its south and west sides. It lies 350 yards (320^m0) southeastward from Long Point Island. 45

Chart 2283.

Ava Island, one-eighth of a mile northwest from Kindersley Island is high and sparsely wooded, a quarter of a mile long in a northwest direction and 200 yards (182^m9) wide, the east shore being steep-to.

- 5 **Beacon**.—On a rock, on the northwest side of Ava Island, is erected a beacon, which in conjunction with another south of Wabend Point, bearing 053°, leads a vessel from a position a third of a mile southeast of Giants Tomb lighthouse to the entrance of Whalesback Channel, with 16 feet (4^m9) of water (in low stages there may be 3½ feet (1^m1) less).
- 10 A rock, awash, lies a quarter of a mile southwest of Ava Island beacon and 250 yards (228^m5) northeast from the Whalesback; it has deep water all round it, but narrows the entrance of Whalesback Channel to 250 yards (228^m5) with depth of 14 fathoms (25^m6).

- 15 **Long Point Island**, so called from its long, low, bare point stretching southward, is situated a little over one mile northwest from Gull Rock and three-quarters of a mile southeastward from Cognashene Point, and one-quarter of a mile southeastward from Muskoka Landing. Long Point Island is 15 feet (4^m6) high and irregular in shape, 250 yards (228^m5) long in a northeast direction by nearly the same width, and is important as marking the south end of the
- 20 narrow portion of Muskoka Landing Channel. No shoal water makes out from it toward the channel.

Maxwell Island is principally important on account of the small wharf known as **Muskoka Landing**.

- 25 **Muskoka Landing** was erected upon its east side to facilitate the landing of passengers and mail for the district from the local steamer running from Midland and Penetanguishene to Parry Sound Harbour. Muskoka Landing is nearly 1½ miles from Gull Rock and nearly two-thirds of a mile southeast from Cognashene Point.

- 30 The island is half a mile long in a northwest and southeast direction and 300 yards (274^m3) in extreme width; the east side is unbroken and steep-to, the west side on the contrary being broken up, and its south end is very close to the north end of Ava Island.

- Vessels using Inside Channel must keep Maxwell Island close on board, as the channel is very narrow, although 4 fathoms (7^m3) can be carried through and
- 35 vessels drawing 12 feet (3^m7) lie at Muskoka Landing wharf. A very small rock, just covered, lies 250 yards (228^m5) southeast from Muskoka Landing. It is very important, as it narrows the channel to less than 100 yards (91^m4) and there is no passage northeastward of it. Shoal water extends 100 yards (91^m4) southeast from this rock.

- 40 **Buoy**.—A red spar buoy is moored near the southeastern end of the shoal, abreast the middle of Maxwell (Whalens) Island.

- Hewes Rocks** form a group of small, dry rocks 150 yards (137^m2) off Muskoka Landing, and very shoal water makes out from them southwestward 75 yards (68^m6), but the channel between this shoal water and the wharf is quite
- 45 clean, and 5 fathoms (9^m1) deep.

Birchall Island, 19 feet (5^m8) high, and about 100 yards (91^m4) in diameter, is a conspicuous island lying a quarter of a mile southeast from Cognashene Point and a little over one-third of a mile north of Muskoka Landing. It forms

Chart 2283.

one of a string of small islands shutting in **Kenebec Island**, one of the large islands in the neighbourhood. It is important, too, on account of the very shoal water making out from it 75 yards (68^m6) into the narrow channel.

Freddy Channel is a shallow, buoyed channel for which local knowledge is required, running from Muskoka Landing (the wharf on Maxwell Island) to Muskoka Mills, and passing southeast of and close to Birchall Island. The general trend of the channel is northeasterly and distance to Muskoka Mills 3½ miles. This channel is subject to silting. 5

Beacons.—On the north shore of the channel north of Portage Island are erected two day beacons, which lead through the dredged channel at this point. 10

Buoys.—Two red and two black spar buoys mark the channel northwestward of the island situated immediately westward of the northwestern point of Portage Island. Four similar buoys indicate the narrow eastern entrance to Freddy Channel off the northern point of Portage Island. 15

Aberdeen Island is irregular in shape, over a third of a mile in greatest length, and a quarter of a mile in greatest breadth. It is well wooded with small pine, poplar, and birch. It is situated one-third of a mile northwest of Muskoka Landing and nearly 200 yards (182^m9) southwestward from Cognashene Point. 20

Cupid Island, very small, 9 feet (2^m7) high, and lying just off the east side of Aberdeen Island, is situated 140 yards (128^m0) south from the nearest part of Cognashene Point. The island is round, almost bare and quite steep-to, making thus a good turning point in the channel.

A rock, with only 5 feet (1^m5) of water on it, lies 350 yards (320^m0) southeastward from Cupid Island. It is the outer end of a spit making out from the islands in the bight between Cupid Island and Muskoka Landing. Being abreast of Birchall Island Reef, it is especially awkward, as the channel is narrowed to 75 yards (68^m6), although having 5 fathoms (9^m1) of water in it. To pass through this narrow place, keep the island between Townsend Island and Cognashene Point just open northeast of Cupid Island, bearing 315°. 25 30

Buoy.—A black spar buoy marks this rock.

Cognashene Point is the west point of a large island, and is situated two-thirds of a mile southeast from Townsend Island. The point is very bluff and steep-to, making it a safe point for vessels to approach. The trees, too, on it make it very marked. 35

Between Cognashene Point and Townsend Island are a couple of small islands lying close northeastward of the channel. These are fairly well wooded, and are quite steep-to. There is a large bay northeast of these islands and good anchorage, but the entrance close to Cognashene Point is not to be recommended to a stranger. 40

Newton Islands (Lat. 44° 56' N., Long. 79° 56' W.), the most northerly of the group of islands on the west side of Muskoka Landing Channel, lie 150 yards (137^m2) southwest from Townsend Island. They are quite steep-to next the channel, and are small with a few bushes on them. A small, dry rock, half a foot high, lies 250 yards (228^m5) southeast from the nearest part of Newton Islands; it lies close to the track but is quite steep-to. From it, the line of small, dry rocks trends in a general south-southeasterly direction half a mile, widening the channel considerably, and then turns more easterly one-quarter of a mile to Cupid Island. 45 50

Chart 2283.

Light.—On the easterly Newton Island is erected a white pyramidal beacon, which from a height of 24 feet (7^m3) exhibits a *flashing white* light visible 10 (9 nautical) miles.

5 **Townsend Island**, 22 feet (6^m7) high and nearly bare, is rendered conspicuous by the long bare rocky slope on the west side, very bright when the sun shines upon it. The island lies three-quarters of a mile northwest from Cognashene Point and 4 $\frac{2}{3}$ miles southeastward from Delf Island, is irregular in shape, nearly a quarter of a mile long in a northeasterly direction and 300 yards (274^m3)
10 wide along its southwest side which is quite steep-to.

A small rock, one foot (0^m3) high, lies nearly a third of a mile northwestward from Townsend Island, and on the southwest side of the track; its northeast side is steep-to, but shoal water extends 75 yards (68^m6) from its southwest side.

A small shoal, with only one foot (0^m3) of water on it, lies 250 yards (228^m5)
15 277° from Townsend Island, and a shoal, with 2 feet (0^m6), lies a little more than a quarter of a mile westward from the nearest part of the same island, but not being near the track, it is of no great importance.

From Townsend Island, the broken shoreline trends in a general northerly direction for 2 $\frac{1}{4}$ miles, and then turns and runs westward about one mile to
20 Bushby Point (*see* page 155).

Directions.—Townsend Island to Mohawk Rock.—Pass midway between Townsend and Newton Islands and about 100 yards (91^m4) from the two islands southeast of the former. Pass 50 yards (45^m7) from Cognashene Point and Cupid Island, and, as soon as possible, bring the island next northwest of
25 Cognashene Point just open northeast of Cupid Island, bearing 315°, to pass through the narrow channel opposite Birchall Island and east of the black spar buoy. When past the latter, gradually haul southward to pass close to Muskoka Landing wharf, and keep the east coast of Maxwell Island close on board, passing between it and the red spar buoy marking the east side of the channel
30 abreast of the middle of the island. Keep in mid-channel opposite Long Point Island, pass 100 yards (91^m4) from the dry rocks off the northeast coast of Kinderley Island gradually altering course for Hotchkiss Rock.

Pass 150 yards (137^m2) northeast and southeast of Gull Rock, and steer southwestward to pass midway between Minnicoganashene and Governor Island.
35 When nearing the southwest point of the former, avoid its spit, which is marked by a red spar buoy, by keeping the whole of McLeod Island open west of Minnicoganashene Island, bearing 031°, and after rounding the spit pass a black spar buoy moored south of the last mentioned buoy across the channel, and keep the latter island on board, particularly near Alice Rock.

40 When southeast of the islet close to Minnicoganashene Island, gradually haul southward, with the leading lights on the latter in line astern, bearing 004°, to pass between Skylark Rock and Smooth Island and between two red and two black spar buoys marking the channel southwest of Skylark Rock. These directions are given to supplement local knowledge, and it is hoped that with
45 these and the charts the master of a light draught vessel may be able to avail himself of the shelter from Midland to Pointe au Baril by the inside channel.

Chart 2283.

INSIDE CHANNEL BETWEEN TOWNSEND ISLAND AND MOOSE POINT

This channel runs in a general northwesterly direction.

Barnard Bank (*Lat. $44^{\circ} 57' N.$, $Long. 79^{\circ} 57' W.$*) has 4 feet (1^m2) of water 5
on its northern end, situated a little more than half a mile northwest from
Townsend Island. The bank is narrow and 250 yards (228^m5) long in a north-
west direction, with 6 feet (1^m8) of water on its south end. The shoalest part of
Barnard Bank is only 150 yards (137^m2) southwest from the nearest part of
Monkhouse Bank, and the track lies between them. 10

Buoy.—A black spar buoy is moored on the southeast end of Barnard Bank.

Monkhouse Bank, with 6 feet (1^m8) of water near its northeast extremity,
lies half a mile northwestward from Townsend Island and $1\frac{3}{4}$ miles southeastward
from Red Rock. The bank is nearly a quarter of a mile in length, and its south-
west end with a depth of 15 feet (4^m6) is close to the ship's track. 15

Several shoals lie northeast of Monkhouse Bank and some distance off the
shoreline of dry rocks, but as they are far removed from the track no special
mention will be made of them.

The only other shoal on the east side of the channel between Monkhouse
Bank and Townsend Island is a small rock, with 12 feet (3^m7) least water on it 20
lying 350 yards (320^m0) northwestward from the northwest end of Townsend
Island, very close to the ship track.

Judd Bank, with 3 feet (0^m9) least water on it, lies with its shoalest part
 $1\frac{1}{2}$ miles northwestward from Townsend Island and over a third of a mile south-
east from Mather Rock. From this shallow spot the bank extends northward 25
150 yards (137^m2) to a depth of 10 feet (3^m0), and 300 yards (274^m3) southeast to
a depth of 14 feet (4^m3). This bank lies nearly a quarter of a mile southwest of
the track.

A rock, awash, lies nearly a mile northwestward from Townsend Island, and
a quarter of a mile southwest of the track, and shoal water surrounds it at a 30
distance of 100 yards (91^m4) in all directions.

Buoy.—A black spar buoy is moored on the southern end of this shoal area.

Mather Rock, 9 feet (2^m7) high, is situated nearly two miles northwestward
from Townsend Island and two-thirds of a mile southward from Red Rock. Dry
rocks lie 200 yards (182^m9) southwest, the same distance northwest, 400 yards 35
(365^m8) northeast, and 100 yards (91^m4) east, respectively, from Mather Rock.

A rock, awash, lies a third of a mile northward from the same, and a spit
with 11 feet (3^m4) of water on it extends 100 yards (91^m4) still further in the same
direction.

A rock, awash, lies 350 yards (320^m0) northeast from Mather Rock. It 40
borders the inside channel and is steep-to on its northeast side, but a reef, with 8
feet (2^m4) of water on it extends 150 yards (137^m2) southeast from it, and parallel
to the ship's track 150 yards (137^m2) distant.

A rock, with less than 6 feet (1^m8) of water on it, lies 200 yards (181^m9)
southeastward from Mather Rock. The end of the whole bank, with 7 feet (2^m0) 45
of water on it, lies 100 yards (91^m4) southwest from this shoal. The bank from
Mather Rock runs thence, a third of a mile northwest, where a depth of 5 feet
(1^m5) will be found.

Chart 2283.

Some other dry rocks lie westward of Mather Rock, but as all the ground about them is foul and unfit for vessels unless carefully buoyed, they will not be described.

5 **Donald Rock**, about 5 feet (1^m5) high, small and clean all round lies half a mile northward from Mather Rock and 300 yards (274^m3) southwest from Red Rock. Just separated from the north end of a bank extending from Mather Rock is a small rock, half a foot high, lying 100 yards (91^m4) southward from Donald Rock.

10 Although not close to the track, two small rocks, 4 feet (1^m2) high, lie westward a quarter, and one-third of a mile, respectively, from Donald Rock.

Warwick Rocks (Lat. 44° 58' N., Long. 79° 57' W.) form the most southerly of the rocks lying between the ship's track and Bushby Point. There are four rocks closely connected in the group, which is 300 yards (274^m3) in diameter and 15 10 feet (3^m0) high. The most southerly one of the group lies three-quarters of a mile northeastward from Mather Rock, and rather over three-quarters of a mile southeast from Red Rock. Shoal water extends southwestward 200 yards (182^m9) to a depth of 5 feet (1^m5) from the southern Warwick Rock.

A small shoal, with 12 feet (3^m7) least water on it, lies a quarter of a mile 20 westward from the latter.

A rock, with 18 feet (5^m5) least water on it, lies a quarter of a mile southwest from the same.

There is possibly good anchorage south of Bushby Point Bluff, but as the shelter is not good and the place of doubtful utility, no close examination was 25 made of it and care must therefore be exercised in using it.

Campion Island, 15 feet (4^m6) high, is situated a little over half a mile eastward from Warwick Rocks and a mile southeastward from Bushby Point. The north side is thickly wooded and the south side being higher and bare, renders the island distinguishable from the rest of the shore at two miles distance.

30 **Rickcord Rocks**, three in number and lying close together, are situated a quarter of a mile northwestward from Warwick Rocks. Between Rickcord and Woore Rocks is another group, 7 feet (2^m1) high, but there is no safe passage anywhere eastward of Red Rock.

A rock, with 4 feet (1^m2) of water on it, lies 250 yards (228^m6) westward from 35 the nearest part of Rickcord Rocks. As this is only 100 yards (91^m4) from the ship's track, caution is necessary. A spit, with 15 feet (4^m6) of water on it, makes out 200 yards (182^m9) southeastward from this shallow rock.

Buoy.—The above rock is marked by a red spar buoy.

40 **Red Rock**, 11 feet (3^m4) high and small, is situated nearly three-quarters of a mile northward from Mather Rock and two-thirds of a mile southwestward from Bushby Point. The moss on it gives it a reddish or orange colour, hence the name. It is steep-to on its south and west sides, but northward are dry rocks and shoal water for a distance of 300 yards (274^m3), where there is a depth of 9 45 feet (2^m7). The track into Bushby Inlet is 100 yards (91^m4) north of this 9-foot (2^m7) spot, and the ship track is 125 yards (114^m3) southwestward of Red Rock.

Light.—On the summit of Red Rock is erected a white pyramidal beacon, which, from a height of 24 feet (7^m3), exhibits a *flashing white* light, visible 10 50 (9 nautical) miles. This light is unwatched.

Chart 2283.

Southeastward 200 yards (182^m9) from Red Rock is a small rock, which is steep-to on its south and southwest sides.

Woore Rocks, six in number, lie a little over one-third of a mile north-eastward from Red Rock and close southward from Foreman Islands and of the track into Bushby Inlet. They are connected by a shallow bank to Bushby Point distant 200 yards (182^m9), but as they are steep-to on the northwest side, they may be kept very close on board when entering the inlet. 5

Beacon.—There is a white beacon on the westernmost Woore Rock.

Felix Rock is the outer of a long string of rocks and islands lying in the mouth of Bushby Inlet half a mile northwestward from Red Rock, and over a third of a mile south of Cecil Island; it is small, about 4 feet (1^m2) high, with deep water all around it. 10

Beacon.—On the rock next eastward of Felix Rock is erected a beacon painted white, which in line with the south side of Campion Island, bearing 123°, leads between Split Rock Bank and Bolster Bank. 15

A rock, awash, lies 100 yards (91^m4) southward from Felix Rock, and a shoal with 10 feet (3^m0) water on it lies 250 yards (228^m5) northward from the same.

Foreman Islands, 19 feet (5^m8) high, are a group lying nearly half a mile eastward from Felix Rock, and the track into Bushby Inlet is south of them; a spit makes off nearly a quarter of a mile southwest from the highest Foreman Island where the depth is but 2 feet (0^m6). A bank, 200 yards (182^m9) long in a northwesterly and southeasterly direction, with 10 feet (3^m0) of water on it, lies with its northwestern and shoalest part a third of a mile westward from the highest Foreman Island, and the track into Bushby Inlet passes close south of it. 20 25

Bushby Point, the southeast entrance point of Bushby Inlet, is situated 2²/₃ miles northward from Townsend Island and 1³/₄ miles southeastward from Split Rock, and 200 yards (182^m9) eastward from Foreman Islands, the track into Bushby Inlet passing 100 yards (91^m4) northwest from the point. 30

Bushby Point Bluff, 56 feet (17^m1) high, is situated a quarter of a mile eastward from the point, and is the only feature on the whole shore than can be recognized beyond a distance of a couple of miles. Its height, shape and some dark trees make it distinctly discernible at a distance of 5 miles. 35

Bushby Inlet is the name given to an inlet northwest of Bushby Point. Protected anchorage can be found here in 4¹/₂ fathoms (8^m2), nearly three-quarters of a mile northward from Bushby Point, but it is hardly a harbour for a stranger to enter.

Go Home Bay, which empties into Bushby Inlet, is a land-locked basin, entered by a narrow channel between the east mainland shore and the small island occupying most of the entrance. It is the site of a popular summer resort, and is much frequented by tourists. 40

Wharf.—There is a privately owned wharf with shelter here, the property of the Madawaska Club. 45

Chart 2283.

Channel.—The channel through Bushby Inlet into Go Home Bay is very narrow. It is entered 400 yards (365^m8) north of Red Rock and, trending northeasterly for Woore Rocks, passes midway between them and Foreman
5 Islands. A white beacon marks the southeast side of the channel here. After passing Bushby Point, the mainland southeast shore must be kept close on board, often not 10 yards (9^m1) distant. Not less than 21 feet (6^m4) will be found till crossing the bar into the bay. A red and a black spar buoy mark the channel between Bushby Point and the bay.

10 **Valentine Rocks**, three in number, and 5 feet (1^m5) high, are situated a little over three-quarters of a mile northwestward from Red Rock and nearly one mile southeastward from Split Rock, and the string extends 250 yards (228^m5) in a southerly direction. Only 9 feet (2^m7) of water will be found 150 yards (137^m2) northeast, and 7 feet (2^m1) 200 yards (182^m9) east from the north part of Valen-
15 tine Rocks, the ship's track passing 100 yards (91^m4) northeastward from these spots. The bank, too, has only 7 feet (2^m1) of water on it 200 yards (182^m9) eastward from the south end of the group, while shallow water extends 250 yards (228^m5) southward. A spot, with 19 feet (5^m8) of water over it, lies a little over one-quarter of a mile south from the southern part of Valentine
20 Rocks.

Spar buoy.—A black buoy marks the extreme of the shoal water to the northeastward of Valentine Rocks.

Cecil Island (*Lat. 44° 59' N., Long. 79° 58' W.*), 15 feet (4^m6) high, is situated over one-third of a mile northeast from Valentine Rocks; the island
25 with a few shrubs upon it. Some dry rocks extend nearly a quarter of a mile northwestward, a few small rocks lie detached from the southwest side, and a shoal bank extends 200 yards (182^m9) from the west side. A small rock, with 13 feet (4^m0) of water on it, lies 250 yards (228^m5) west of the northern rock of Cecil Island. The latter lies a quarter of a mile from the west coast of Island
30 No. 509, or **Long Island**, lying in the mouth of Bushby Inlet.

The channel between Long Island and the island to the northeast has been improved for small craft by dredging at **Devil's Elbow**. At this point a channel
20 feet (6^m1) wide has been dredged to a depth of 5 feet (1^m5), at a datum which is 578·5 feet above mean tide, New York. The centre line of the channel is
35 marked by two sets of white diamond-shaped beacons with a black stripe down the middle.

Split Rock is situated one mile northwestward from Valentine Rocks. It is really only a small rock, but the term applies to the whole of the group of islands and rocks of which it is the southern termination. Shoal water runs southerly
40 off Spit Rock a long distance, making the ship's track in this locality very dangerous.

Southwestward a quarter of a mile from Spit Rock will be found a spot with 9 feet (2^m7) of water on it, which is only 50 yards (45^m7) from the track. A third
45 of a mile south from the same is a spot, with 10 feet (3^m0) of water on it, 75 yards (68^m6) from the track.

Clearing mark.—The south side of Campion Island over, or slightly open northeast of the rock next east of Felix Rock, bearing 123°, leads southwest of these shoal spots.

Chart 2283.

Westward 300 yards (274^{m3}) from the south end of Spit Rock is a small dry rock, with a shallow spit extending from it 150 yards (137^{m2}) south, where will be found a small spot having on it 8 feet (2^{m4}) of water. The track is only 75 yards (68^{m6}) southwest from this.

5

East of Split Rock group is a large bay with many shoals and dry rocks.

Bolster Bank is a long narrow bank with its northwest end, with 12 feet (3^{m7}) of water on it, situated rather less than half a mile west, and its southeast end, with 18 feet (5^{m5}) on it, over half a mile south from the south end of Split Rock. One shoal spot, with only 2 feet (0^{m6}) of water on it, lies a little southeast from the northwest end. Another, with the same depth, lies a third of a mile southwestward from Split Rock. The ship's track passes over a couple of spurs on the northeast side of Bolster Bank; so that in going through this part of the inside channel only 14 feet (4^{m3}) of water can be counted upon (in low stages there may be 3½ feet (1^{m1}) less), and the track is crooked.

15

Buoys.—Each of the 2-foot (0^{m6}) rocks is marked by a black spar buoy; a red spar buoy is moored on the 9-foot (2^{m7}) rock abreast the southern of the black spar buoys and another red spar buoy marks the channel at the south end of the bank.

Delf Island, 13 feet (4^{m0}) high, with a few bushes on it, is situated half a mile northwestward from Split Rock and over a third of a mile southeasterly from Morris Island; it is 200 yards (182^{m9}) long in a northwest direction by 100 yards (91^{m4}) in width. Shoal water extends 200 yards (182^{m9}) southward from its south end to 11 feet (3^{m4}) and 100 yards (91^{m4}) west of the island to less than 6 feet (1^{m8}).

25

Beacon.—A slatwork triangular beacon painted white is erected on the northwest point of Delf Island.

Superior Shoal, with 5 feet (1^{m5}) of water on it, is situated 250 yards (228^{m5}) westward from Delf Island. The shallow head is surrounded on all sides by only slightly deeper water for a distance of 50 yards (45^{m7}). The ship's track is 75 yards (68^{m6}) northeastward of Superior Shoal.

30

Buoys.—A black spar buoy is moored on the east side of Superior Shoal and a red spar buoy marks the rock, with less than 6 feet (1^{m8}) of water on it, lying west of Delf Island.

Single Rock, 7 feet (2^{m1}) high, is very small and situated a third of a mile westward from the northwest point of Delf Island. Except for a spit that makes out in a northeasterly direction 50 yards (45^{m7}) to a depth of 9 feet (2^{m7}), it has deep water all around it.

35

Morris Island, 9 feet (2^{m7}) high, flat and treeless, is the outer of a large group, its west end being situated half a mile northwestward from Delf Island and one mile southeast from Kerr Island. It is about 200 yards (182^{m9}) in diameter; shoal water extends westerly from it 200 yards (182^{m9}) to a depth of 14 feet (4^{m3}), and to within 100 yards (91^{m4}) of the ship's track. Nearly a third of a mile northwest from Morris Island is a small outlying rock, with 11 feet (3^{m4}) of water on it, which is a short distance eastward of the track.

45

Between Delf and Morris Islands, shoal water fringes the line of rocks westward for an average distance of 200 yards (182^{m9}).

Chart 2283.

Nicholson Spit, with 6 feet (1^m8) of water near its outer end, is the termination of a chain of dry and sunken rocks extending westward from the shore. The outer end of the spit lies two-thirds of a mile northwesterly from Morris Island, and the ship's track lies 150 yards (137^m2) westward from this spit.

Monument Channel, providing a more sheltered route, leaves the main channel north of Nicholson Spit and passing east of Split Rock and the islands lying north of it, rejoins the main channel between Cecil Island and Valentine Rocks. The channel has been dredged over a width of 50 feet (15^m2) to a depth of 9½ feet (2^m9) below a datum, which is 578.5 feet above mean tide, New York.

Buoys and Beacons.—Monument Channel south entrance black spar buoy is moored in 18 feet (5^m5) of water southeast of Split Rock. Two white pyramidal day beacons, south entrance range beacons, are located a mile north of Split Rock on the large island inside Nicholson Spit; the rear beacon is located about 300 feet (91^m4), 337° from the front one. A white triangular slatwork beacon, west entrance beacon, 10 feet (3^m0) high, is situated on the north point of the island lying a third of a mile east of the outer end of Nicholson Spit.

Kerr Island, small, treeless and 14 feet (4^m3) high, is situated one mile northwestward from Morris Island and a third of a mile southeast from The Teat. It has good water close to it, but it is only separated by a deep gully 6 fathoms (11^m0) deep, from a very bad shoal, with 9 feet (2^m7) of water on it, lying 75 yards (68^m6) southwest of the island, and, to avoid this danger vessels should keep the island close on board.

Buoy.—A black spar buoy is moored on the southwestern side of the channel, 150 yards (137^m2) south of Kerr Island.

Beacons.—On Kerr Island are erected two white beacons, which in line, bearing 340°, lead west of the spit above mentioned, and all shoals to Delf Island.

The north point of **Gibson Reef**, awash, lies 350 yards (320^m0) southwestward from Kerr Island, and the reef extends thence nearly a quarter of a mile southwest, with a width of about 200 yards (182^m9); on it are several small dry rocks, the highest 7 feet (2^m1) being the most southerly of the group southwestward of The Teat.

The Triplets, a group of three small rocks, 3 feet (0^m9) high, lying nearly a quarter of a mile southwesterly from Kerr Island, are steep-to.

Allen Rocks form a group two-thirds of a mile long, east and west, by a third of a mile in greatest breadth, the most easterly rock, 2 feet (0^m6) high, and bold-to being situated one-quarter of a mile northwestward from Kerr Island and 300 yards (274^m3) southward from The Teat. The northern island of the group, 11 feet (3^m4) high, is situated a quarter of a mile westward from The Teat. The track is midway between these rocks and The Teat.

The Teat (Lat. 45° 01' N., Long. 80° 01' W.), 17 feet (5^m2) high, lies 200 yards (182^m9) southeast from the highest Teat Rock, and is connected thereto by the other two dry rocks. All four may be approached to 25 yards (22^m9)

Teat Rocks, so called from the shape of the southeastern one, are four in number, situated with the northwestern, largest and highest 20 feet (6^m1) high, half a mile northwest from Kerr Island and the same distance southeast from One Tree Island.

Chart 2283.

The bay behind Teat Rocks and Morris Island is from a quarter to half a mile long, and the bottom is lumpy, necessitating great caution in its use. The eastern shore of this bay and of the channel, as far as Delf Island, is broken up into innumerable islands and rocks for some distance. All the islands are wooded with stunted pines and poplars, and at a short distance no break in the continuity of the shore can be discerned. 5

Between Teat Rocks and One Tree Island, the mainland, which is only a quarter of a mile back, is fringed with shallow water for a distance of 200 yards (182^m9). 10

Addington Bank, over a third of a mile long in an east and west direction, with an average width of 150 yards (137^m2), has two dry rocks on it; one 2 feet (0^m6) high, situated at the southeast corner half a mile westward from the largest Teat Rock, and having shoal water extending northwestward 300 yards (274^m3). The other, one foot (0^m3) high, near the middle of the bank, distant nearly half a mile westward of Spray Rock has shoal water extending from it 300 yards (274^m3) farther in the same direction. 15

Spray Rock, 6 feet (1^m8) high, is situated one-third of a mile northwesterly from the largest Teat Rock and a quarter of a mile southward from One Tree Island; being steep-to on its west side every little sea causes the spray to fly over it, and thus its name. It forms the southwest corner of a triangular-shaped bank, the north corner, with 7 feet (2^m1), being 250 yards (228^m5) northward and the east corner, with 9 feet (2^m7) of water, 350 yards (320^m0) eastward from Spray Rock; the ship's track passes 100 yards (91^m4) southwest of the latter. 20

Southwest 350 yards (320^m0) from Spray Rock is a very small rock, 3 feet (0^m9) high, with a dangerous spit extending from it northwesterly 150 yards (137^m2), with 7 feet (2^m1) of water over it. 25

Buoy.—A red spar is moored 150 yards (137^m2) southeast of Spray Rock.

A white bulls-eye with red centre is painted on the channel side of the rock.

One Tree Island, 22 feet (6^m7) high, and easily recognized in the vicinity by its single tree with a very dark top (1949), is situated one mile northwestward from Kerr Island and a third of a mile southeastward from Otley Island. It is 200 yards (182^m9) long northwest and southeast, by 150 yards (137^m2) wide, and like most of the islands is only the outer one of a string often extending a long distance from the mainland. One Tree Island marks the southern entrance of a narrow boat channel called **Indian Harbour**, through which small craft can carry 11 feet (3^m4). 30 35

The northern entrance to Indian Harbour is 300 yards (274^m3) south of Black Rock (*see* page 161) and on its shores are erected several summer cottages.

Shoal water extends 100 yards (91^m4) southwest from the southwest point of One Tree Island, and 200 yards (182^m9) northwest from the north point. A quarter of a mile northwest from the island is a small rock, 3 feet (0^m9) high, with fairly deep water round it. 40

Gunn Island, lying about one cable eastward of One Tree Island, is almost one mile in length and of irregular width. Its southern side is indented by several small coves. 45

A white bulls-eye, with red centre, is painted on the first point of the mainland northward of the western end of Gunn Island.

Wharf.—A small wharf known as **Pratt's dock**, is situated on the eastern side of the island which protects Indian Harbour from westward. 50

Chart 2289.

Happygolucky Island, immediately northeastward of the latter island, and at the northern entrance to Indian Harbour, is one-half mile in length and more than one-quarter mile in greatest width. A white bulls-eye with red 5 centre is painted on its most southerly point.

Digby Bank, awash, lies nearly two-thirds of a mile westward from One Tree Island, and from this shoal spot the bank trends northwest 100 yards (91^m4) to a depth of 13 feet (4^m0), and southeast 200 yards (182^m9) to 12 feet (3^m7). Between this and the bank west of Ottley Island (*see below*), are two 10 small shoals with depths of 15 feet (4^m6), and the track is between them.

Eastward 250 yards (228^m5) from the rock, awash, and 100 yards (91^m4) southwest of the track is a shoal, with 7 feet (2^m1) only on it. From Digby Bank, a string of shoals, with 13 to 16 feet (4^m0 to 4^m9) of water on them, extends three-quarters of a mile northwestward, the outer spot of 13 feet (4^m0) lying 15 half a mile southwest from American Camp Island.

Buoy.—A black spar buoy is moored in 18 feet (5^m5) of water about 1½ cables eastward of Digby Bank.

Hervey Rock, with less than 6 feet (1^m8) of water over it, is situated a third of a mile westward from the shoalest part of Digby Bank, and to the 20 depth of 12 feet (3^m7), extends west 100 yards (91^m4). A quarter of a mile northwest from Hervey Rock is a small shoal with 13 feet (4^m0) water on it.

Ottley Island forms the southeast entrance point of Big David Bay; it is small and is situated one-third of a mile northwestward from One Tree Island, three-quarters of a mile southeast from American Camp Island, and the same 25 distance southwest from Black Rock. It is 16 feet (4^m9) high, has a few bushes on it, and is joined by a string of dry rocks to the shore distant nearly a quarter of a mile. The west side of the island is clean, but from its northern end a reef of dry and sunken rocks extends northward over a quarter of a mile, where there is a depth of only 5 feet (1^m5). Boats of light draught pass close, but 30 those of heavier draught keep a third of a mile west from Ottley Island.

Nearly 300 yards (274^m3) northwest from the latter is a very small, low dry rock, whence a spit extends northeastward 100 yards (91^m4), where 10 feet (3^m0) will be found. Northwest one-quarter of a mile from Ottley Island is another spot on the same bank, with only 5 feet (1^m5) of water on it. South- 35 west, a little over a third of a mile, are two small dry rocks, half a foot and 2 feet (0^m1) high, and from the latter shoal water extends northwest 150 yards (137^m2) to a depth of 11 feet (3^m4). These three small dry rocks are joined by shallow water, forming a bank half a mile long northeast and southwest.

Buoy.—A red spar buoy marks the 5-foot (1^m5) rock.

40 **American Camp Island**, 10 feet (3^m0) high, flat, of medium size with a few pines on it, and the most southerly of Big David Bay group, is situated three-quarters of a mile northwestward from Ottley Island and one-third of a mile southwest from Peacock (No. 9) Island. Southwestward 300 yards (274^m3) from it, is a rock, 5 feet (1^m5) high, the southernmost of the group. Islands and 45 rocks of various heights, shapes and sizes, occupy the space between Peacock (No. 9) and American Camp Islands; only 15 feet (4^m6) of water will be found a quarter of a mile eastward from the south point of American Camp Island, and a rock, awash, lies 350 yards (320^m0) east of the same point.

Chart 2289.

Black Rock (Lat. $45^{\circ} 02' N.$, Long. $80^{\circ} 01' W.$), small and 10 feet (3^m0) high, lies 200 yards (182^m9) from the eastern shore and three-quarters of a mile northeast from Ottley Island.

Between the line joining Black Rock and the narrow point of the mainland immediately northeastward of Happygolucky Island and one joining Peacock and Crozier (No. 10) Islands on the west, a bar of dry rocks and dangerous shoals almost blocks the inside channel. The two beacons in King Bay in line (see page 162) should take a vessel across the bar with 11 feet (3^m4). 5

A shoal, 250 yards (228^m5) long, with 15 feet (4^m6) least water over it, lies one-third of a mile southwestward from Black Rock and close to the south side of the vessels track. 10

Gillespie Island, small, 12 feet (3^m1) high and nearly bare, lies three-quarters of a mile northward from Black Rock. Shoal water extends northwest 200 yards (182^m9) and islands and dry rocks nearly a quarter of a mile southerly from Gillespie Island. The shore between the entrance of Miner Creek and Gillespie Island is nearly straight and may be approached to 50 yards (45^m7), while southeast from the island the broken up shore runs two-thirds of a mile to the entrance of a shallow unsurveyed bay. 15

Peacock Island, formerly known as No. 9 Island, the largest of the group, half a mile long north and south, by over a quarter of a mile in width, is nearly connected with Crozier (No. 10) and Wawataysee Islands. 20

Buoys.—A red and a black spar buoy are moored about 300 yards (274^m3) eastward of the southeastern tip of the island, and a second red spar about 300 yards eastward of the middle of the island. 25

Crozier Island, known as No. 10 Island, is the next island northeastward, near the channel and half a mile southward from Wood Island; it is wooded, about 10 feet (3^m0) high, and small.

Buoy.—A black spar buoy is moored about 300 yards (274^m3) northeastward of Crozier Island, and nearly on the line of King Bay beacons. 30

Iron Rock, small, about 5 feet (1^m5) high, with shoal water stretching eastward 150 yards (137^m2), lies 200 yards (182^m9) northeastward from the northern point of Peacock Island.

Buoy.—A black spar buoy is moored 200 yards (182^m9) east of Iron Rock.

Wawataysee Island, situated a third of a mile southward from Wood Island, is conspicuous on account of its height, 25 feet (7^m6), and the summer houses erected thereon; it is only about 700 yards (640^m1) long by 100 yards (91^m4) wide, and has a small wharf on its north side which only boats of light draught can use. It is less than 200 feet (61^m0) distant northwesterly from the northern extreme of Peacock Island. 35

Shawanaga Island, 16 feet (4^m9) high, rather larger than the average of the neighbouring islands, and nearly bare, is 350 yards (320^m0) long in a northeast direction by 175 yards (144^m8) in greatest width, and its northeast end lies one-third of a mile northwestward from the northern extreme of Peacock Island. A bank, with a depth of 7 feet (2^m1) and 200 yards (182^m9) long, lies southeastward from the northeast end of Shawanaga Island, being separated therefrom by a narrow channel, in using which, the island must be kept close on board. 40

Wood Island, nearly $1\frac{1}{4}$ miles northwest from Black Rock and 200 yards (182^m9) northeast from Shawanaga Island, is important as being the turning point of the inside channel. This island, the northeasternmost of the group 45

Chart 2289.

sheltering Big David Bay, is nearly circular, 11 feet (3^m4) high, with only one small detached dry rock lying 40 yards (36^m6) from its northeast side. Shoal water extends 100 yards (91^m4) east, and 50 yards (45^m7) southwest from Wood Island, and the ship's track is east and north of it.

Buoy.—A black spar buoy is moored about 275 yards (251^m7) southeastward of Wood Island.

Geraldine Island, small, wooded, about 20 feet (6^m1) high, 225 yards (190^m3) long east and west, and 40 yards (36^m6) wide, lies 250 yards (228^m5) westward from Wood Island, and the water on its north side is 10 fathoms (18^m3) deep.

King Point forms the west entrance point of **King Bay**, the northern inlet of Big David Bay, and in which there is good anchorage. From the head of King Bay there is a portage of about 1½ miles to **Twelvemile Bay**. East, rather over half a mile from Wood Island, is the entrance to **Miner's Creek**, a narrow channel connecting Big David and **Tadenac Bays**.

Beacons.—On two islands in King Bay, situated a third of a mile eastward from King Point, are erected two beacons painted white, which in line, bearing 001°, lead through the portion of the channel eastward of Peacock Island.

Big David Bay is an indentation of the coast between Black Rock and King Point, the features of which have been described above. The bay may be entered from the northwest or the south, and fair anchorage with good shelter had, either east of Shawanaga Island, west of Gillespie Island, or off the north entrance to Indian Harbour.

Directions, Big David Bay to Townsend Island.—After rounding Wood Island (*see above*), steer 154°, until the beacons in King Bay are in line astern, bearing 001°. On this range, the vessel will pass just eastward of the black spar buoy moored east of Crozier Island, west of the red spar buoy east of the middle of buoy moored east of Crozier Island, west of the red spar east of the middle of Peacock Island, and between the red and black spars moored eastward of the southern end of the island.

Keep the beacons so until abeam of Black Rock, when haul eastward for the narrow northern entrance to Indian Harbour, south of Happygolucky Island. Proceeding southward through Indian Harbour, pass the northwestern extremity of Gunn Island close-to on the port hand. Continue southwesterly to leave the eastern point of One Tree Island to starboard. Thence alter course to pass close westward of the Teat Rocks.

An alternative route from abreast Black Rock passes, westward of the red spar buoy moored 3 cables north of Ottley Island, continues southward, leaving the latter island, the two small islands northward of it, and the islet, 3 feet (0^m9) high, 1½ cables southwest of Ottley Island, to port. Spray Rock, with a red spar moored northward of it, is also left to port, and course is shaped to pass midway between Allen and Teat Rocks.

Keep mid-channel between Teat and Allen Rocks, gradually turning round the eastern Allen Rock, distant 100 yards (91^m4). Pass close southwest of Kerr Island and northeast of the black spar buoy, and when the beacons on it are in line astern, bearing 340°, keep them so until between Delf Island and Superior Shoal buoy. Now steer for Sawlog Point for a short time, and then haul gradually eastward, bringing the south side of Champion Island over, or slightly open northeast of the rock next east of Felix Rock, bearing 123°, pass northeast of Bolster Bank black spar buoy, and then southwest of Split Rock bank red spar buoy.

Chart 2283.

When the south extreme of Cecil Island is abeam on the port side, and, on the starboard side, the black spar buoy marking the northeast extreme of the shallow water extending northeast from Valentine Rocks, haul southward to pass 70 yards (64^m0) west of Red Rock, with the southwest fall of Beausoleil Island about half a point on the port bow. After passing Red Rock light, haul a little eastward, heading for the gap in the bluff on Beausoleil Island, which should be seen over the southwest side of Townsend Island, bearing about 148°. Pass 100 yards (91^m4) northeastward of the black spar buoy moored on the southeast end of Barnard Rock, and the same distance northeastward of the rock, one foot (0^m3) high, lying a third of a mile northwest of the entrance to Muskoka Landing Channel, and steer thence for the middle of the entrance.

For the description of inside channel between Big David Bay and Moose Point, see page 172.

The outer islands and shoals from Giants Tomb Island to Gooseberry Island will now be described:—

Charts 2283, 2289.

North Watcher Island (Lat. 44° 58' N., Long. 80° 04' W.), the larger of "The Watchers" and the more conspicuous, is easily recognized by the low bushes covering the whole island, and the large tree (1893) on its north end considerably over-topping the rest. The tree bears 054°, distant 6.1 (5.4 nautical) miles, from Hope Island lighthouse. The tree is close to the north edge of the island, which is about 20 feet (6^m1) high and 150 yards (137^m2) long north and south by 100 yards (91^m4) wide. A reef of gravel and stones extends southeast nearly a quarter of a mile, and the same distance southwest. Dry stones also lie 100 yards (91^m4) off the northwest side of the island, and a detached dry rock lies 300 yards (274^m3) eastward from the tree.

South Watcher Island, small, and 9 feet (2^m7) high, lies one mile southward from North Watcher Island. A few low bushes on it add very little to its height. Dry stones make out north a third of a mile, and 200 yards (182^m9) westward, while a detached stone, 9 feet (2^m7) high, lies 250 yards (228^m5) eastward from the island.

The Watchers lie on one large shallow bank, which extends over three quarters of a mile northeast from North Watcher Island, where will be found a depth of 13 feet (4^m0) over boulders; and nearly three-quarters of a mile south from South Watcher Island, where will be found a depth of 17 feet (5^m2) with 11 feet (3^m4), 200 yards (182^m9) inside, rapidly shoaling to less than 6 feet (1^m8). The bank midway between The Watchers is nearly a mile wide, and has less than 6 feet (1^m8) of water at its western edge.

Watcher Reef is a large reef of boulders, some of which are just dry, lying one mile southwesterly from South Watcher Island. The reef makes out from the dry stones southwestward 200 yards (182^m9) to 17 feet (5^m2), with 8 feet (2^m4) a short distance inside; northward 300 yards (274^m3) to a spot with less than 6 feet (1^m8); northeastward nearly half a mile to 16 feet (4^m9), and 200 yards (182^m9) eastward to 15 feet (4^m6) of water. Between this reef, and the large bank of The Watchers just described, is a lane of deeper water, but it is not recommended. Between the shoals bordering North Watcher and Pine Islands there is a passage two-thirds of a mile wide, the leading mark for which is given on page 165. The holding ground under The Watchers is poor.

In thick weather, or at night between Moose Point and The Watchers a vessel should not stand into less than 15 fathoms (27^m4), when uncertain of position.

Charts 2283, 2289.

Alfred Bank.—The southern and shoalest part of this bank, with depth of 9 feet (2^m7), lies three-quarters of a mile northward from the northeast point of Giants Tomb Island; the bank trending 250 yards (228^m5) northwestward to 5 a depth of 18 feet (5^m5), with a width of 150 yards (137^m2).

Hopkins Bank, three cornered, with shallowest part of 13 feet (4^m0) in the middle, lies 1.1 miles north from the same point; a rock, with depth of 16 feet (4^m9), is situated a little less than a mile northward from the same point.

Both Alfred and Hopkins Banks lie just westward of a much larger and 10 shoaler bank of very irregular shape.

Roe Rock, one foot (0^m3) high, lies $1\frac{2}{3}$ miles northward from the northeast point of Giants Tomb Island. It is very small and has no shallow water immediately connected with it. A bank lies 150 yards (137^m2) southwest from 15 Roe Rock; it is a quarter of a mile long east and west, and 200 yards (182^m9), wide the shallowest part, 8 feet (2^m4) being on the east, while a depth of 14 feet (4^m3) will be found on the other end.

Grace Bank has 6 feet (1^m8) on its northeast end, and is situated southeastward $1\frac{1}{4}$ miles from the southeast and the nearest rock of Pine Islands.

Pine Islands are a large group of islands and rocks lying from $1\frac{1}{4}$ to 2 20 miles from the islands and dry rocks constituting the northeast shore of Georgian Bay. Only two of the islands have trees on them, although several more have a few small bushes. Situated so far from the shore, one would expect to be able to distinguish them from a long distance seaward, but on account of being low and bare they show up only from comparatively close in.

25 **Gray Island**, 39 feet (11^m9) high, a quarter of a mile long in a northwest direction, and 250 yards (228^m5) wide, lies 4 miles northwesterly from the northern extremity of Giants Tomb Island, half a mile southwestward from Southeast 30 Wooded Pine Island, and $2\frac{1}{4}$ miles northeastward from North Watcher Island. The island, as its name indicates, is of a grey tint, and has only a few small bushes on it. It is one of a string of dry rocks, extending 250 yards (228^m5) north- 30 west from its northwest point, and a third of a mile southeast from its southeast point, the last being the southeastern of Pine Islands.

From the southeastern rock, a bank makes out southeastward, two-thirds of a mile to a spot, with less than 6 feet (1^m8) of water on it, then forks out, one 35 spit going half a mile southeastward where will be found less than 6 feet (1^m8), and the other a third of a mile southwestward to a depth of 15 feet (4^m6). No vessel can pass through between these spits and Giants Tomb Island without buoys, and frequent changes of course. The whole ground northeast of a line 40 joining Gray and Giants Tomb Islands is full of shoal water and totally unfit for navigation.

A bank, with 12 feet (3^m7) least water near its middle, lies a quarter of a miles southwestward from the southeast dry rocks of The Pines.

Relatively to the southeast dry rock of The Pines lie the following shoal spots, with their depths, bearings and distances:—

45 A bank with 12 feet (3^m7), 166° , half a mile; a rock with 17 feet (5^m2), 211° the same distance; a patch of same depth, 180° , two-thirds of a mile; a rock with 15 feet (4^m6), 164° , one mile; and one with 18 feet (5^m5) of water 162° , $1\frac{1}{4}$ miles.

Southwestward of this string of sunken rocks are many others, on none of 50 which was found less water than 21 feet (6^m4), but it is again recommended to use all caution in this locality.

Charts 2283, 2289.

Fawkes Rock, 5 feet (1^m5) high, is small, lying two-thirds of a mile westward from Gray Island, and has rocks, awash, extending a quarter of a mile northward from it. The outer shoal, with 18 feet (5^m5), lies a little more than a quarter of a mile westward, and shoals under that depth extend the same distance southward from Fawkes Rock. When in this vicinity, vessels should not proceed further northeast than to have Adams Point in line with the Gap of Giants Tomb Island, bearing 141° . 5

On account of the distance of Adams Point, the extreme may not always be discernible, in which case a vessel, using the passage between The Watchers and Pines, will find as good water by keeping the northeast fall of Adams Point bluff in the hollow of the trees on the main part of Giants Tomb Island, on nearly the same bearing, which leads one-third of a mile further southwestward. The first marks lead 250 yards (228^m5) southwest from Anchor Rock and a third of a mile on the same direction from Bolger Rock; the latter leads a third of a mile further from these dangers but only 150 yards (137^m2) northeast of, or inside Spain Rock. 10 15

Grieve Rock (*Lat. $44^\circ 59'$ N., Long. $80^\circ 02'$ W.*), 5 feet (1^m3) high and small, has shallow water extending from it a long distance, and lies three-quarters of a mile northwest from the north end of Gray Island. Depths under 10 feet (3^m0) extend southwestward a quarter of a mile; under 7 feet (2^m1) northwestward, 200 yards (182^m9); under 6 feet (1^m8) northeastward nearly a quarter of a mile, and less than 12 feet (3^m7) southeastward two-thirds of a mile from Grieve Rock. A bank, with 17 feet (5^m2), lies two-thirds of a mile northwestward from the same. Westward a third of a mile from Grieve Rock, 10 feet (3^m0) will be found, being the middle and shoalest part of a bank one-third of a mile long in a northwesterly direction and 100 yards (91^m4) wide, with 15 feet (4^m6) of water at the ends. 20 25

A rock, 7 feet (2^m1) high and small with very little shallow water lying off it, lies one-quarter of a mile northward from Grieve Rock.

Anchor Rock, with 11 feet (3^m4), over it lies three-quarters of a mile westward from Grieve Rock, it being 150 yards (137^m2) long in a northwest direction. 30

Southeast Wooded Pine Island is about 30 feet (9^m1) high, and on account of its trees is the most conspicuous island in the group. The island is nearly elliptical in shape, 350 yards (320^m0) long in a northwest direction, by 150 yards (137^m2) wide. It lies half a mile northeastward from Gray Island and 247° , distant $1\frac{1}{4}$ miles, from Delf Island. 35

Northwest, 200 yards (182^m9) from Southeast Wooded Pine Island, is a small rock lying on the bank joining Table Rocks and Southeast Wooded Pine Island. 40

Stretching southeastward over a third of a mile from Southeast Wooded Pine Island are three rocks, but as they are less than 12 feet (3^m7) high and not conspicuous, they are unimportant to the general navigation. Shoal water extends nearly half a mile southeast and two-thirds of a mile southward from the southeast rock just alluded to. 45

Table Rocks, 21 feet (6^m4) high, so called from the flat appearance of the top of the highest one, are comprised in a group about 300 yards (274^m3) in diameter, none being over 75 yards (68^m6) across, which lie a little over one mile northward from the northern end of Gray Island. Shoal water and small dry rocks connect this group with Gilead Rock and Southeast Wooded Pine Island. 50

Northwestward, one-quarter of a mile from Table Rocks, is a rock about 100 yards (91^m4) in diameter and 15 feet (4^m6) high. It has a few small, dry rocks stretching off 100 yards (91^m4) northeastward, and shoal water connects it with Table Rocks and Gilead Rock.

Charts 2283, 2289.

North Wooded Pine Island is 26 feet (7^m9) high, but covered with pines that give it much higher appearance. Its northwest point is situated 1½ miles northwestward from Table Rocks and a third of a mile southeast from the southeast point of Northwest Pine Island, with which it is connected by shoal water. The island is nearly rectangular in shape, a third of a mile long southeast and northwest, and 200 yards (182^m9) wide.

Gilead Rock, 13 feet (4^m0) high, lies 150 yards (137^m2) southeast from the southeast end of North Wooded Pine Island. A very shallow spit makes out in a southerly direction a quarter of a mile from Gilead Rock, and a shallow bank with some dry rocks on it joins it to Table Rocks.

The small rock, half a foot high, in the middle of **Spencer Reef**, lies three-quarters of a mile southwesterly from Gilead Rock. The reef extends a third of a mile northward to 13 feet (4^m0), with only 5 feet (1^m5) close to it, and nearly a quarter of a mile southeast, where there is a depth of 10 feet (3^m0). The reef has an average width of 200 yards (182^m9) and is generally very shoal.

A rock, having 16 feet (4^m9) least water on it, lies 700 yards (640^m1) westward from the dry rock on Spencer Reef. Another, with 14 feet (4^m3) of water on it, lies northwesterly nearly two-thirds of a mile from the same rock, and the two are connected by slightly deeper water.

Spain Rock, with 11 feet (3^m4) least water on it, is a very important shoal lying a long way offshore, and having just enough water on it to bring up a large vessel with any sea on. It is 150 yards (137^m2) long north and south, by 50 yards (45^m7) wide, and lies 341°, distant 2½ miles, from the tree on North Watcher Island. A small rock, with 18 feet (5^m5) of water on it, lies 400 yards (365^m7) southward from Spain Rock.

Between Spencer Reef and Spain Rock are several 21-foot (6^m4) spots that appear shoal, when passing over them, but a careful search could discover nothing dangerously shallow. At the same time, great care must be taken when in less than 10 fathoms (18^m3) of water, as these rocks rise almost perpendicularly from the bottom, and are extremely hard to find with the lead. While every care has been taken to discover the shoals, some, possibly, are omitted.

Northwest Pine Island is composed of two islands, the eastern one of which has a few small bushes on it. The two islands together are over a third of a mile long northwest and southeast, 250 yards (228^m5) wide, 23 feet (7^m0) high, and are situated 2 miles southwestward from American Camp Island (*see* page 160). Close off the northwest point is very deep water, but a bank makes out 250 yards (228^m5) from the northeast side of the island to a depth of 9 feet (2^m7).

Between Northwest Pine Island and Hervey Rock, alluded to on page 160, are several shoal banks, but as they lie considerably southeastward of the Big David Bay track no special mention will be made of them. Passage exists northeast of Pine Island, but as the numerous shoals are distributed in such an irregular fashion, the locality is extremely dangerous and unfit for use without buoys.

A dangerous shallow spit extends in a southerly direction a third of a mile from Northwest Pine Island and a shallow bank connects it with North Wooded Pine Island.

Two rocks, 6 feet (1^m8) high, lie from 300 to 400 yards (274^m3 to 365^m7) westward from Northwest Pine Island, and from them shallow water extends northwestward 200 yards (182^m9) and southeastward a third of a mile.

A bank, with 10 feet (3^m0) least water on it and 300 yards (274^m3) long northwest and southeast, lies with the latter and shallower extremity distant a quarter of a mile northwest from Northwest Pine Island. The northwest end, with 17 feet (5^m2) of water over it, is only 75 yards (68^m8) southeast of the range into Big David Bay.

Charts 2283, 2289.

Bolger Rock, with 9 feet (2^m7) least water on it, is a small, but serious danger in the approach to Big David Bay. It lies 250°, and is distant one mile, from the northwest extremity of Northwest Pine Island, and 300 yards (274^m3) southeast of the track into Big David Bay (*see below*). 5

A rock, with 15 feet (4^m6) least water on it, lies 1.4 miles southwestward from the same point of Northwest Pine Island, and should be guarded against by vessels in the vicinity.

Steers Rock (*Lat. 45° 01' N., Long. 80° 05' W.*), very small, and only one foot (0^m3) high, may really be called the northern limit of the long string called Pine Islands, stretching from the rock in a general southeasterly direction 4 $\frac{1}{4}$ miles. Steers Rock bears 293°, distant three-quarters of a mile, from the northwest end of Northwest Pine Island, and 177°, distant 2 $\frac{3}{4}$ miles, from Clark Rock. 10

While the rock itself has deep water close to it, it is surrounded at a moderate distance by shoal water. The south end of a small bank, with 12 feet (3^m7) of water on it, lies 150 yards (137^m2) east from Steers Rock and extends northeastward 200 yards (182^m9). 15

Two rocks, with 15 feet (4^m6) least water on each, lie 200 and 400 yards (182^m9 and 365^m7) southwestward from Steers Rock. 20

A rock, with only 7 feet (2^m1) of water on it, lies 300 yards (274^m3) westward, and another with 12 feet (3^m7) a third of a mile northwest from Steers Rock.

The range for approaching Big David Bay, before alluded to on page 162, passes 350 yards (320^m0) southeast of Steers Rocks. A good passage could be buoyed for entering Big David Bay northwest of Pine Islands. The surveying steamer *Bayfield* in 1893 frequently ran in here, by keeping the summer house on the point northeastward of Happygolucky Island in line with a beacon on top of Black Rock, bearing 062°, and passed over not less than 21 feet (6^m4) (in low stages there may be 3 $\frac{1}{2}$ feet (1^m1) less). 25

Phillimore Rock, with 11 feet (3^m4) least water on it, is the shoalest of a long string of shoals extending southeastward to within 200 yards (182^m9) of the track. It lies one mile northward from the northwest end of Northwest Pine Island. From Phillimore Rock, the string extends nearly a quarter of a mile northwestward, where there is a depth of 14 feet (4^m3), and a half a mile southeastward to a depth of 15 feet (4^m6). 30

A rock, with 15 feet (4^m6) least water on it, lies nearly two-thirds of a mile southeastward from Phillimore Rock. 35

Mal de Mer Bank is long, narrow and dangerously shoal, extending in a southeast direction to within 300 yards (274^m3) of the track into Big David Bay. Its southeast and narrowest end lies one mile northeast from the northwest extremity of Northwest Pine Island. Thence the bank trends northwest two-thirds of a mile, with little more than 10 feet (3^m0) of water on any of it. Its greatest width is near the middle, and the bank is just detached from the main very shoal bank. 40

Lewis Bank, with 11 feet (3^m4) least water at its south end, is 200 yards (182^m9) long north and south, and narrow, and lies 200 yards (182^m9) from the southeast extreme of Speke Bank, and one-quarter of a mile northwestward from Mal de Mer Bank. 45

Chart 2289.

Percy Rock, with 16 feet (4^m9) least water on it, and the outer dangerous rock in the immediate vicinity, is situated 2 miles northwestward from Northwest Pine Island and 1½ miles southward from Clarke Rock. It is surrounded by a bank, upon which is slightly deeper water, but as the whole neighbourhood is uneven, vessels should proceed with caution when so close in.

A rock, with 18 feet (5^m5) of water on it, lies nearly a quarter of a mile northward, from Percy Rock and one, with 15 feet (4^m6) on it, lies a little further in nearly the same direction.

10 **Norman Bank**, with 7 feet (2^m1) of water, lies one mile northwestward from Phillimore Rock. The bank in a northwesterly direction is a quarter of a mile long, but quite narrow, and only 100 yards (91^m4) from the southwest edge of Speke Bank.

15 **Tottenham Shoal**, with 4 feet (1^m2) least water on it, lies a quarter of a mile northwest from Norman Bank. The narrow bank is a quarter of a mile long in a northwesterly direction, and only 100 yards (91^m4) from the southwest edge of Speke Bank.

Speke Bank is just separated by a narrow channel, having 4 fathoms (7^m3) least water in it, from the reefs on the south side of Gooseberry Island (see page 173). The bank is very shoal all over, the edges dropping in places from a couple of feet to 7 fathoms (12^m8) in a few yards distance. The outer and northwest corner, with 9 feet (2^m7) least water, is situated a quarter of a mile southward from Clarke Rock. The bank, nearly half a mile wide at its north end, gradually tapers to 100 yards (91^m4) and is 1¼ miles long in a north- west and southeast direction.

Inside or east of this bank is a narrow lane of deeper water fringing the bank fronting the islands in Big David Bay. Nearly in a straight line from Gooseberry to American Camp Islands runs a string of low dry rocks with very shoal water extending southwest from them. No vessel should venture into this area.

Western Islands, consist of two groups or clusters of small islands and rocks, of Laurentian formation, called North Group and South Group, separated by a good channel a little over 2 miles wide and more than 10 fathoms deep (18^m3).

35 The Western Islands lie northeast of the track of vessels from Cabot Head to Matchedash Bay, and just southwest of the line joining Red Rock (Parry Sound) with Hope Island lighthouse. They occupy an area of about 10 square miles, the groups being 5½ miles long in a northeast and southwest direction, by about 3 miles broad. Double Top Island lighthouse on the southwestern of the south group, bears 311°, distant 12½ (11 nautical) miles from Hope Island lighthouse. North East Rock (see page 169), bears 161°, distant 19½ (17 nautical) miles from Red Rock lighthouse, and 274°, distant 7¾ (6¾ nautical) miles from the western islet of Bass Group, commonly called Moose Point.

45 Most of the islands are bare of trees, small, and not very high, the water in the vicinity being generally very deep even close to the rocks. The shoals, in consequence, are especially dangerous, the lead giving little warning, and in the event of striking, a vessel is liable to founder in deep water.

North Group.—North Island, the northernmost of Western Islands, is wooded and 50 feet (15^m2) high. The island is a little over a quarter of a mile long northeast and southwest, and, including the adjacent rocks, double that distance in length; good landing may be had in moderate weather, on the south side.

Chart 2289.

The water is deep close to North Island, rendering it a safe object to make for, if bound from Owen Sound to Parry Sound via Wabuno Channel, in which connection it may be stated that the course from Vail Point Shoal light-buoy to North Island is 042° and distance $33\frac{3}{4}$ ($29\frac{1}{2}$ nautical) miles. Lone Rock (see page 183) bears from North Island 045° , and is distant $5\frac{1}{2}$ ($4\frac{3}{4}$ nautical) miles. 5

Caution.—The course from Owen Sound leads only 300 yards (274^m3) northwest from Western Islands South Group shoals.

North East Rock, 12 feet (3^m7) high and bare, with two small dry rocks close to its west side, has deep water all round it, excepting on its north side, whence a shallow spur extends 100 yards (91^m4). A depth of 30 fathoms (54^m9) will be found 200 yards (182^m9) eastward from the rock. 10

Between Western Islands and Lone Rock, the bottom is very uneven, and it is possible owing to the small size of some of the rocks on this shore that less water may exist; care therefore should be taken by the master of a vessel to stop and get a cast of the lead on any place having the appearance of discoloured water. 15

One Tree Island (Lat. $45^{\circ} 05' N.$, Long. $80^{\circ} 18' W.$) lies half a mile south of North Island and may be easily recognized by its single pine; it is really composed of two islets, 30 feet (9^m1) high, and having, together, a diameter of 300 yards (274^m3). Westward 200 yards (182^m9) from the island is a very small dry rock, and very shoal water extends 100 yards (91^m4) further in the same direction. A quarter of a mile northward from One Tree Island is a small rock, with 18 feet (5^m5) of water on it, and a shallow bank with 9 feet (2^m7) on its outer edge extends north from the northwest side of the island 200 yards (182^m9). 25

A small rock, 40 yards (36^m6) in diameter and about 10 feet (3^m0) high, lies midway between One Tree Island and North East Rock; shoal water extends 75 yards (68^m8) south, and a small shoal with 21 feet (6^m4) of water on it lies 300 yards (274^m3) northeast from it.

Long Island, 42 feet (12^m8) high, lies a quarter of a mile southwest from the nearest part of One Tree Island. It is elliptical in shape, a little over a quarter of a mile long east and west, and 200 yards (182^m9) in greatest width. Small dry rocks extend 200 yards (182^m9) westward from its west end, and shoal water 50 yards (45^m7) farther. 30

The southern part of North Group is composed of seven small islands and many small rocks close together; the northwestern island has a few trees on it, making the height to appear about 100 feet (30^m5), the others are bare. The whole cluster is nearly circular and about a third of a mile in diameter. 35

Westward 200 yards (182^m9) from the northwestern island of the cluster is a very small rock, 5 feet (1^m5) high, and 100 yards (91^m4) farther west is a rock, awash. 40

Northeastward 200 yards (182^m9) from the northeast islet of the cluster is a rock, 10 feet (3^m0) high, and 100 yards (91^m4) in diameter, connected thereto by a shallow bank, but having deep water on its north side. Southeastward 150 yards (137^m2) from this rock is a spot, with 10 feet (3^m0) of water on it, and a quarter of a mile further in the same direction is a patch, with depth of 17 feet (5^m2). Southeastward, 150 yards (137^m2) from the northeast islet, is a spot with 16 feet (4^m9) of water on it. 45

The southwest, south, and southeast sides of this cluster have deep water close to them; Long Island and the latter are connected by a bank over which it is not safe to venture. Long and One Tree Islands have a passage between them, as have also, North and One Tree Islands.

Chart 2289.

Western Islands Harbour is situated in the middle of the cluster just described, and contains such very limited space that even small vessels cannot swing at anchor, but have to make fast to the rocks; the shelter, too, is not very good as the islets are small, and some sea with a strong current runs between them. The entrance to this harbour is on the northeast side of **Crescent Island** (the south islet of the cluster) and must be approached from the southeast.

South East Rock, and **Black Rock** lying near it, are quite detached from North and South Groups. The former, 18 feet (5^m5) high, is in two parts, both small, occupying a space of 200 yards (182^m9) long north and south, by 100 yards (91^m4) wide. South East Rock bears 176°, distant 2½ miles, from North East Rock, and the water close round the former is deep, but the following detached spots lie in the vicinity:—

A small rock, with 7 feet (2^m1) water on it, a quarter of a mile southwestward, and another with 10 feet (3^m0) two-thirds of a mile southward from the highest part of South East Rock. Both have deep water close to them, necessitating a good lookout when in their vicinity.

A bank, with 4 feet (1^m2) of water on it, is situated a quarter of a mile northeastward of the same rock, and a depth of 7 feet (2^m1) is to be found 200 yards (182^m9) further in the same direction.

Black Rock, 11 feet (3^m4) high and 50 yards (45^m7) in diameter, lies nearly half a mile westward from South East Rock, and outside the distance of 50 yards (45^m7) the water is deep.

South Group.—Jagged Island, 35 feet (10^m7) high and quite bare, is situated 1½ miles northeastward from Double Top Island; it has the shape of an equilateral triangle, the east side running north and south. Northeast, 100 yards (91^m4) from its north point, is a small dry rock with deep water close to it, and, from its southwest point a string of low rocks extends 300 yards (274^m3) in a westerly direction; these rocks have deep water close to them. A small shoal, with 11 feet (3^m4) of water over it, lies 200 yards (182^m9) from the northwest side of the island.

A small rock, with 19 feet (5^m8) of water over it, lies half a mile northwestward from Jagged Island, and another, with 15 feet (4^m6), lies eastward a little over a third of a mile from the same.

Deaf Man Shoal, with 12 feet (3^m7) of water, is situated nearly 1¼ miles northeasterly from Jagged Island, and marks the northeastern termination of the 10-fathom (18^m3) bank; it lies also slightly north of west the same distance from Black Rock.

Gull Island, 44 feet (13^m4) high, nearly circular and small, lies a quarter of a mile southeastward from Jagged Island; two small low rocks lie close northward of Gull Island, and another rock lies 100 yards (91^m4) from its southeast side. On the west side, the water is fairly good, but a very shallow bank connects it and Jagged Island, extending a quarter of a mile northeast of the line joining their northeast sides, where there is a depth of 18 feet (5^m5), with only 8 feet (2^m4) close to it.

From Gull Island, a bank extends nearly half a mile southeasterly, where the depth is 16 feet (4^m9), at half that distance the depth is 8 feet (2^m4), with very shallow water closer to the island. The southern end of a detached bank, with 13 feet (4^m0) of water on it, lies a third of a mile eastward from Gull Island, it being a quarter of a mile long north and south, and 100 yards (91^m4) wide.

Chart 2289.

A small rock, with 18 feet (5^m5) of water on it, lies two-thirds of a mile south-east, and one, with less than 6 feet (1^m8), a third of a mile westward from Gull Island.

Block Island, 18 feet (5^m5) high, bare, and about the size of Jagged Island, lies half a mile southward from Jagged Island; shoal water extends westward 150 yards (137^m2) from its north point, and a dangerous rocky bank joins Block Island to Gull Island. 5

Thumb Rock is a small bare triangular rock 22 feet (6^m7) high, situated three-quarters of a mile eastward from Double Top Island. Dry rocks extend 10 southward 200 yards (182^m9), and a bank with 12 feet (3^m7) over a quarter of a mile in the same direction; shallow water extends 100 yards (91^m4) from the other sides of the rock. A rock, with only 5 feet (1^m5) of water on it, lies a quarter of a mile southeast from Thumb Rock. Jagged, Gull and Block Islands, with Thumb Rock, are situated on a common 10-fathom (18^m3) bank, which extends 15 1½ miles northeast from Jagged Island and 2¼ miles southward from Gull Island; the bank has an average width of 1¼ miles, nearly all of it lying eastward of the above islands.

Southeastward a mile from Thumb Rock is a depth of 20 feet (6^m1), on a narrow shoal lying north and south extending one-quarter of a mile southward and half a mile northward from the shallow spot. 20

Anchorage.—In the vicinity of The Westerns, anchorage in convenient depths is not easily obtained, but this bank serves such a purpose, although the bottom is hard, with no shelter.

Double Top Island (Lat. 45° 02' N., Long. 80° 21' W.), 28 feet (8^m5) 25 high and quite bare, is 200 yards (182^m9) long east and west, and about 40 yards (36^m6) wide; it is nearly divided in two, hence its name. It is steep-to, and may be easily recognized by the lighthouse, fog-alarm building, and keeper's dwelling standing on it.

Light.—**Fog signal.**—A *flashing white* light every 15 seconds is exhibited, 30 at an elevation of 74 feet (22^m6), from a white, octagonal, wooden tower on the western end of Double Top Island.

A fog diaphone sounds *one blast* every 30 seconds.

Dangers near Double Top Island.—In the vicinity of Double Top Island and surrounded with deep water are the following sunken rocks:— 35

A rock, with 7 feet (2^m1) of water on it, lies 256°, distant three-quarters of a mile; a spot with 18 feet (5^m5), 266°, nearly one mile; a patch with 16 feet (4^m9), 278°, two-thirds of a mile, and a rock, with 8 feet (2^m4) of water over it, nearly a third of a mile eastward from Double Top Island lighthouse.

Northeastward, a quarter of a mile from Double Top Island lighthouse, is a 40 very small rock, 7 feet (2^m1) high, steep-to on its southwest and west sides, but a shallow bank, with depths of less than 6 feet (1^m8), extends northeastward a quarter of a mile, with an average width of 250 yards (228^m5).

West Rock, 21 feet (6^m4) high, quite bare, and small, is situated half a mile northwestward from Double Top Island, and is the most westerly rock of South 45 Group; it is surrounded by detached dry rocks which are steep-to. Half a mile eastward from West Rock is one of about the same size, 24 feet (7^m3) high, with deep water surrounding it.

Chart 2289.

Pool Rocks are situated half a mile northeastward from West Rock; the cluster consists of four small rocks (the highest 17 feet (5^m2) high) lying close together, and having deep water all round them, excepting for a shoal, with 15 feet (4^m6) of water on it, lying 250 yards (228^m5) eastward.

Caution.—Shoals have been reported as lying further from Western Islands, but the survey failed to discover them. Masters of vessels are, however, cautioned to keep a very careful lookout in the vicinity of The Westerns, as the shoals are very small and might be easily missed by the ordinary methods of sounding. The water about these islands is comparatively clear and discoloration can be seen some distance.

The passages through the groups appeared to be clear during the survey but as they are not of much practical advantage to general navigation a casual examination only was made.

15 INSIDE CHANNEL BETWEEN BIG DAVID BAY AND MOOSE POINT

Ward Island, very small and wooded, lies five-eighths of a mile westward from King Point and 1 $\frac{2}{3}$ miles eastward from Bourke Point. The channel here is between it and Middle Rock, and is only 100 yards (91^m4) wide, but fortunately the shores on each side are particularly steep-to.

20 From King Point westward, the mainland forms the north shore of the channel, trending in a general westerly direction. Deep water will be found off all this shore.

Middle Rock, round, smooth, and 10 feet (3^m0) high, lies in the middle of the inside channel, and 100 yards (91^m4) southwestward from Ward Island; 25 the channel, 8 fathoms (14^m6) deep, is close to its north side.

The string of islands and rocks lining the south side of the inside channel, eastward of Middle Rock, is quite clean, and as they are all small, without distinguishing features, will receive no special mention.

Fairlie Island is a small wooded island lying one-quarter of a mile south- 30 westward from Ward Island, and close to the southwest side of the inside channel. It is the most northerly of the large group of islands and rocks in the mouth of Big David Bay, and is joined to a numerous string of islands and rocks trending southwestward and eastward. The round, smooth rock, 100 yards (91^m4) west of Fairlie Island, is used in conjunction with the entrance to 35 **Miner's Creek**, as the leading mark mentioned to lead south of Gooseberry Island.

Tully Island is the most conspicuous island close to the channel, its east end being situated nearly one-third of a mile westward from Ward Island. It is thickly wooded, but only about 10 feet (3^m0) high. It is nearly oblong, a 40 quarter of a mile long east and west, with an average width of 100 yards (91^m4). Lying nearly 100 yards (91^m4) southwest from the west point is a very shallow rock that must be guarded against. It is marked by a red spar buoy.

Between Tully and Ward Islands the bay is foul; the most dangerous rock, 45 having only 7 feet (2^m1) of water over it, is situated 250 yards (228^m5) westward from the south point of Ward Island.

Between Ward Island and Bourke Point, the mainland is easily discernible at a distance of from 50 yards (45^m7) to one-quarter of a mile from the line of the islands. Nowhere does it attain any height over 25 feet (7^m6), and is sparsely covered with pines, birch, and poplar of a small growth.

Chart 2289.

Niblett Island, 30 feet (9^m1) high, lying close to the channel, is situated one-third of a mile westward from Tully Island; the island, nearly oblong in shape, a quarter of a mile long east and west, by 150 yards (137^m2) wide, is densely wooded, making it a distinct feature on the shore. Between Band and Niblett Islands, but further from the channel, is a small island with a dangerously shallow spot lying 70 yards (64^m0) south of it. By keeping the west end of Niblett Island close on board, a small vessel will find limited but good anchorage in the bay north of it. 5

Band Island, about 25 feet (7^m6) high, and wooded, lies a quarter of a mile westward from Niblett Island, and shoal water extends from its south point 70 yards (64^m0). 10

Calvin Island, small, wooded and 13 feet (4^m0) high, lies nearly a mile northwestward from Fairlie Island and a quarter of a mile eastward from Gooseberry Island; it has several detached dry rocks lying off its east, south, and western sides, but from none does shoal water extend beyond 100 yards (91^m4). 15

The space between Calvin and Fairlie Islands is filled with low, dry reefs and shoals, none of which, however, are close to the ship's track, which abreast of Fairlie Island has a depth of 10 fathoms (18^m3).

Bourke Point is a low, thickly wooded point of the mainland, 2¼ miles 278° from King Point, and 2 miles southeast from O'Donnell Point. Though not a prominent feature, it is steep-to and all vessels must pass southwest of it, where a depth of 10 fathoms (18^m3) will be found in the ship's track. Between Bourke and O'Donnell Points, the mainland shore recedes from view, being hidden by several tiers of islands and rocks, that present no conspicuous features on this monotonous shore. 20 25

Beacon.—On the south side of Bourke Point is a white, diamond-shaped beacon with a red stripe.

Gooseberry Island, 15 feet (4^m6) high and partly wooded, is only conspicuous when seen detached from the main shore; it is diamond-shaped, 300 yards (274^m3) long east and west by 150 yards (137^m2) wide, lying less than one-quarter of a mile southward from Bourke Point. Dry rocks lie 250 yards (228^m5) from the south side of the island. 30

Beacon.—On the north side of Gooseberry Island is a square beacon painted white with a black stripe. 35

Clarke Rock (*Lat.* 45° 04' N., *Long.* 80° 05' W.), very small and 7 feet (2^m1) in height, is situated a third of a mile west from Gooseberry Island, and shoal water extends northwesterly 100 yards (91^m4), to a depth of 5 feet (1^m5), and 300 yards (274^m3), to 11 feet.

The four following unnamed shoal spots lie, in regard to Clarke Rock, thus: 40

A 12-foot (3^m7) rock, 292°, distant nearly one mile; an 18-foot (5^m5) patch, on the same bearing, distant two-thirds of a mile; a 16-foot (4^m9) rock, 280°, three-quarters of a mile; and a 13-foot (4^m0) spot, on nearly the same bearing, distant two-thirds of a mile.

A narrow channel, south of Gooseberry Island, was used during the survey, by keeping the entrance to Miner's Creek (*see* page 162) in line with the north side of the small rock at the end of Fairlie Island, bearing about 090°. 45

Chart 2289.

Spohn Spit, with 6 feet (1^m8) of water on it, lies half a mile westward from Bourke Point, and is the dangerous tail of a bank making out from the islands skirting the mainland, and to lead southwest of which, take care to have Southeast Wooded Pine Island over the top of Clarke Rock, bearing 150°.

Buoy.—A red spar buoy is moored on the western extremity of Spohn Spit.

Pawsey Rock, small and 8 feet (2^m4) high, is situated seven-eighths of a mile, 321°, from Clarke Rock. From Pawsey Rock, very shallow water extends in southerly and southeasterly directions 100 yards (91^m4), and a small dry rock lies 100 yards (91^m4) west of it.

Gahan Rock, with 11 feet (3^m4) of water on it, the most important shoal near Tryon Island, lies a quarter of a mile southwestward from the island, and 120 yards (109^m7) in the same direction from the nearest dry rock of the group. The vessel's track is close southwest of this 11-foot (3^m4) rock, which has to be guarded against by keeping rather closer to Pawsey Rock than to the dry rock just mentioned, keeping Southeast Wooded Pine Island its own width open southwestward of Clarke Rock, bearing 148°.

Southeast of Pawsey Rock is a shoal, with less than 6 feet (1^m8) on its shoalest part. **Cameron Rock**, so called locally, with 7 feet (2^m1) on it, lies on the northeast corner of the shoal and a quarter of a mile southeast of Pawsey Rock.

Buoy.—Cameron Rock is marked by a black spar buoy, and the vessel's track passes close northeastward of the rock.

Tryon Island, 16 feet (4^m9) high, is the most prominent feature on this shore, being the highest bare island in the vicinity. This island, less than 100 yards (91^m4) in diameter, and surrounded by detached rocks, is situated three-quarters of a mile northwest from Bourke Point; shallow water extends west, and northwest, a quarter of a mile from the island.

A white bulls-eye, with red centre, is painted on the small rock one-quarter of a mile west of Tryon Island.

The Pig, so named from the appearance of a large boulder on it, is 6 feet (1^m8) high, and lies 1½ miles northwesterly from Clarke Rock. A vessel may pass on either side of The Pig, but the track usually taken is close west of it.

The Sow is a rather larger rock, 10 feet (3^m0) high, lying westward 200 yards (182^m9) from The Pig, and is surrounded, at a distance of 50 yards (45^m7), by three other smaller rocks. A spur, with 7 feet (2^m1) of water on it, stretches about half-way to The Pig compelling vessels to keep the latter on board; shoal water also extends northward 150 yards (137^m2) to a depth of 6 feet (1^m8). A very small rock, 5 feet (1^m5) high, lies 270 yards (246^m8) south from The Sow, with which it is connected by very shallow water. The shallow bank extends southerly to Pawsey Rock connecting it with The Sow. A quarter of a mile westward from The Sow is a small detached rock, with 18 feet (5^m5) of water on it, and half a mile southwest of same, another small rock lies, with 12 feet (3^m7) of water over it.

Buoy.—A black wooden spar buoy is moored in 16 feet (4^m9) of water, 20 feet (6^m1) eastward of the 7-foot (2^m1) spur.

Chart 2289.

Seaman Bank, with less than 6 feet (1^m8) of water on it, is situated with its centre over three-quarters of a mile southwesterly from The Sow; it has an average width of 300 yards (274^m3), and, from its middle, the bank extends north-west a quarter of a mile to a depth of 14 feet (4^m3), and one-third of a mile southward to 18 feet (5^m5). 5

One-third of a mile southeast from the middle of Seaman Bank is a small detached shoal with depth of 18 feet (5^m5).

Whyte Reef, composed of five small dry rocks surrounded by shallow water, has a diameter of nearly a quarter of a mile, its middle being situated three-quarters of a mile westward of The Sow. 10

A rock, awash, lies a third of a mile northwestward from the middle of above reef and northward of it the passage is 11 fathoms (20^m1) deep.

Clearing mark.—To pass westward of Whyte Reef and Seaman Bank, keep the summit of McQuade Island touching the outer rock of Bass Group, bearing 341°. 15

Hatch Island, lying two-thirds of a mile southeast from O'Donnell Point, is 300 yards (274^m3) long, 100 yards (91^m4) wide, about 20 feet (6^m1) high, and covered with pines; deep water approaches it to within 50 yards (45^m7). Hatch Island forms the north entrance point of a limited anchorage with in-different shelter. 20

O'Donnell Point, of the mainland, is situated 2 miles northwestward from Bourke Point. The point, well-wooded to within 100 yards (91^m4) of its end, is comparatively high, being about 25 feet (7^m6) above the water. It is surrounded on all sides by small rocks and reefs, but only those bordering Inside Channel will be described. 25

This channel 300 yards (274^m3) west of O'Donnell Point is only 40 yards (36^m6) wide, and, in passing through, Gillford Rocks (*see* below) should be kept close on board to avoid the very shallow spit extending from O'Donnell Point.

Southward 270 yards (246^m9) from the southwest part of O'Donnell Point is a small dry rock, surrounded by shoal water to a distance of about 75 yards (68^m6), the vessels' track passing 150 yards (137^m2) southwest of this rock. 30

Beacon and buoy.—A white triangular slatwork beacon, 15 feet (4^m6) high, stands on the west end of the small island lying off O'Donnell Point; the beacon is 1,000 feet (304^m8) from the point. A red spar buoy marks a rock, with less than 6 feet (1^m8) on it lying close south of the island. 35

Gillford Rocks form a group, the eastern one of which lies 350 yards (320^m0) westward from O'Donnell Point; from this rock the group stretches over a third of a mile southwestward, with a width of a quarter of a mile; the highest rock is 12 feet (3^m7), and some have a few small bushes on them. As before stated, Inside Channel passes close to the northeast side of the group, and the other sides may be approached to 100 yards (91^m4). A channel may exist between Gillford Rocks and Bass Group, but it was not examined. 40

O'Donnell Channel, as the passage between Seaman Bank and The Sow is called, is a safe passage for vessels entering or leaving Inside Channel at O'Donnell Point, but in the absence of beacons and buoys no intelligible directions can be given. 45

Chart 2289.

Deer Island (*Lat. 45° 05' N., Long. 80° 07' W.*), the sharp west point of which is situated a mile southwesterly from O'Donnell Point, is 26 feet (7^m9) high, wedge-shaped, and a quarter of a mile long in a northwesterly direction, by
 5 150 yards (137^m2) broad at the base and east side of the wedge. Viewed from the south, the inside is conspicuous, the bare portion being light coloured and surmounted by a large tuft of pines, which appear detached from the trees on the main shore.

Excepting a spit, with 10 feet (3^m0) of water on its outer edge, extending
 10 northwesterly from the west end of the island, the shores are quite steep-to, and good passage to Inside Channel exist on both sides of Deer Island.

Leading mark.—The summit of Tryon Island (the only high bare rock on this shore) touching the north side of The Sow (*see* page 174), bearing 102°, leads toward Inside Channel, south of Deer Island.

15 **Bass Group** is a cluster of islands and rocks lying from three-quarters of a mile to one and a quarter miles westward from O'Donnell Point; the highest is about 10 feet (3^m0) high, and a few have some small trees upon them. The northeast extremity of the bank surrounding the group, with 9 feet (2^m7) of water upon it, lies two-thirds of a mile northwestward from O'Donnell Point, and
 20 only 50 yards (45^m7) southwest from the steamer track.

Cowie Reef, the southeastern end of which is situated one and a half miles westward from O'Donnell Point, is half a mile long in a northwest direction and a quarter of a mile wide. On the reef are several dry rocks, one near its north-west extremity and some near the southeast end, a quarter of a mile west of the
 25 Bass Group.

The reef lies on an extensive bank, with depths less than 3 fathoms (5^m5), running northwesterly beyond Maxwell Rock which also lies on it.

Maxwell Rock (*Lat. 45° 05' N., Long. 80° 08' W.*), lies two-thirds of a mile northwesterly from the southeastern end of Cowie Reef and shallow water
 30 extends 200 yards (182^m9) northward, where a depth less than 6 feet (1^m8) is found, and westward, one-third of a mile where several rocks awash are situated.

The outer shoal in this locality, with 18 feet (5^m5) of water on it, lies nearly half a mile, 246°, from Maxwell Rock. A small rock, with the same depth on it, lies a third of a mile southwest of Maxwell Rock.

35 **Jacques Island**, half a mile long and narrow, lies east and west, with its eastern end half a mile northward from O'Donnell Point. Dry rocks lie 200 yards (182^m9) west of the western end, and south of the same extremity of the island.

Buoy.—A red spar buoy is moored about 250 yards (228^m6) west of Jacques Island, to mark a shoal.

40 **New Channel.**—On the east side of the small island lying east of Jacques Island, a channel has been dredged to a depth of 13 feet (4^m0). By way of this dredged cut, there is now another passage for vessels from O'Donnell Point to rejoin the westerly channel at Milligan Island. This new channel is generally used by smaller craft in heavy weather, and is marked by one red and one black
 45 spar buoy.

Passage Island, 12 feet (3^m7) high, is situated westward, a little more than a quarter of a mile from the western extremity of Jacques Island. A dry rock lies 100 yards (91^m4) eastward of Passage Island, and between this rock and those lying near the western end of Jacques Island, 11 feet (3^m4) of water was carried
 50 in 1891.

Chart 2289.

Directions, Jacques Island to Big David Bay.—No stranger should attempt the inside channel, even with these directions, without first having been piloted by one well acquainted. The channel in places is very narrow, and the slightest deviation from the track might put a vessel ashore.

Pass midway between the small dry rock eastward of Passage Island and the outer dry rock westward of Jacques Island, heading for the highest part of Bass Group, and passing west of the red spar buoy off Jacques Island. When North Island of The Western is seen south of Maxwell Rock, the latter bearing 272° , haul to the southeast, and steer for Tryon Island, passing 150 yards (137^m2) southwest of the dry rock south of the west end of Jacques Island, and keep on this course till past the spit from Bass Group. Pass midway between Gillford Rocks and the rocks off O'Donnell Point, and close northeast of the southeast Gillford Rock, to avoid the shallow spit on the northeast side of the channel, marked by a red spar buoy.

Steer for Northwest Pine Island until the south sides of Bass Group and Gillford Rocks are in line, bearing 277° ; then keep The Pig a little on the star-board bow, until nearly up to the latter, when steer to pass 50 yards (45^m7) southwest from it and east of a black spar buoy (not more than 13 feet (4^m0) can be relied on, here, and in stages there may be $3\frac{1}{2}$ feet (1^m1) less). After passing The Pig, steer to pass 100 yards (91^m4) northeast of Pawsey Rock, and, to avoid Gahan Rock, bring Southeast Wooded Pine Island its own width open southwestward of Clarke Rock, bearing 148° .

When 100 yards (91^m4) southeast of Pawsey Rock, close the gap between Southeast Wooded Pine Island and Clarke Rock, or bring them in line, bearing 150° , passing northeast of the shallow bank lying southeast of Pawsey Rock, marked by a black spar buoy and southwest of Spohn Spit, marked by a red spar buoy. Keep the latter mark on until Fairlie Island bears 104° , and is well open south of Bourke Point. This course should be kept until past the shoal southwest of Tully Island, marked by a red spar buoy, when a vessel may haul northward, passing close north of Middle Rock, and north of Wood Island.

Directions.—Pinery Point to O'Donnell Point.—After passing the red light-buoy marking the end of the spit from Pinery Point (*see* page 117), steer for the northwest end of Smooth Island, until the gap between the southeast end of the same island and Skylark Rock bears 004° . The leading lights on Minnicoganashene Island, in line on this bearing, will lead between two black spar and two red spar buoys marking the channel southwest of Skylark and Mohawk Rocks, and over the bar with 11 feet (3^m4) (in low stages there may be $3\frac{1}{2}$ feet (1^m1) less).

When The Tomb is over the highest part of Smooth Island, alter course northwestward to pass 25 yards (22^m9) from the islet lying close to the south side of Minnicoganashene Island, heading for the middle of the small island forming the northeast extreme of Giants Tomb Island, to avoid the 5-foot (1^m5) rock on the port hand. Steer thus until past the black buoy, moored on the southwest edge of the channel abreast of the middle of Smooth Island, or until the east side of McLeod Island is in sight, when haul sharply northeastward to pass between the spits from Keating and Minnicoganashene Islands (the latter marked by a red spar buoy) by keeping the west side of Minnicoganashene Island in line with the east sides of Buller and McLeod Islands, bearing 039° .

Keep now, in mid-channel between Governor and Minnicoganashene Islands and pass 150 yards (137^m2) southeast, and northeast from Gull Rock. Pass the same distance northeast of Kindersley Island and 100 yards (91^m4) southwest of Long Point Island; immediately after passing the south point of

Charts 2289, 2283.

the latter, bring the east side of Maxwell Island close on board, and pass between it and the red spar buoy marking the east side of the channel abreast of the middle of the island. Pass Muskoka Landing wharf 30 yards (27^m4) distant
 5 and steer a little northeast of Cognashene Point, so as to bring the southwest side of the island between the last mentioned point and Townsend Island just open northeast of Cupid Island, bearing 311°, before Birchall Island is reached. A black spar buoy marks the channel southwest of Birchall Island.

Pass 40 yards (36^m6) northeast of Cupid Island and the same distance
 10 southwest from Cognashene Point; thence, keep 75 yards (68^m6) from the northeast shore. After passing midway between Townsend and Newton Islands, steer for Red Rock light in line with the east side of the Split Rock Group, bearing 328°—the latter shows up well as an island—and the southwest fall of Beausoleil Island astern. When the isthmus on Beckwith Island is in line with
 15 the northeast end of Giants Tomb Island, bearing 236°, Barnard and Monkhouse Banks will be passed, the former being marked by a black spar buoy.

Gradually bring the small gap in the bluff on Beausoleil Island over the west side of Townsend Island, bearing 147°, with the middle of the Split Rock Group ahead. This will take a vessel past Mather and Donald Rocks on the port hand,
 20 and Rickcord Rock, marked by a red spar buoy, with Red Rock on the starboard hand. When abreast the latter, haul northward a little to bring the east side of the Split Rock Group a little on the port bow, which should carry a vessel 150 yards (137^m2) southwest of Felix Rock, and 300 yards (274^m3) northeast of the northern Valentine Rock (a black spar buoy marks the northeast extreme of
 25 the shallow water extending from this rock) until the south side of Campion Island is over, or slightly open northeast of the rock east of Felix Rock, and the south end of Single Rock ahead, bearing 303°.

This range should clear all the shallow water from Spit Rock, and lead over the northeast part of Bolster Bank, in not less than 14 feet (4^m3) excepting in
 30 low stages, when there may be 3½ feet (1^m1) less. The channel here is very crooked and is marked by spar buoys. Unless certain of the channel, speed should be reduced, the lead kept going, and a good lookout kept.

When North Watcher Island (*Lat. 44° 58' N., Long. 80° 04' W.*) is in line with the south end of Gray Island proper, bearing 246°, haul northward a little
 35 to pass between the black spar and red spar buoy marking Superior Shoal and the rock off Delf Island.

When past these shoals haul northward and steer 340° for Kerr Island beacons in line.

Round the black spar south of Kerr Island and, when close to the island, pass
 40 50 yards (45^m7) southwest of it, 100 yards (91^m4) northeast of the southeastern Allen Rock, and the same distant southwest of the highest Teat and Spray Rocks. A red spar buoy is moored southeast of Spray Rock and a white bullseye with red centre is painted on the rock itself. After passing this rock, haul to the northward and pass westward of Ottley Island and the small islands south-
 45 ward and northward of it. Leave to starboard the red spar buoy, marking the rock more than one-quarter of a mile northward of the above island, and steer to pass about 1¼ cables west of Black Rock.

An alternative and more sheltered route diverges from the above track at The Teat Rocks and passes through Indian Harbour. A minimum depth of 11
 50 feet (3^m4) is available in this passage. Leaving The Teat Rocks close to starboard, steer to pass eastward of One Tree Island; keep the northwestern extreme of Gunn Island close on board to starboard and, after steering a mid-channel

Chart 2289.

course through Indian Harbour, alter course to westward, and passing through the narrow channel southwestward of Happygolucky Island (*see* page 160), rejoin the outer track westward of Black Rock.

When west of Black Rock, keep the beacons on the islet in King Bay in line, bearing 001° , leading between the black and the red spar buoys moored east of the southern end of Peacock Island and close east of the black spar moored off Crozier Island; pass 150 yards (137^m2) north of Wood Island, 75 yards (68^m8) north of Geraldine Island, and midway between Ward Island and Middle Rock. After passing the latter, steer for the gap south of Gooseberry Island until past Fairlie Island, when alter course to 285° , leaving the red spar buoy off Tully Island to starboard and passing midway between Calvin and Niblett Islands, and midway between Gooseberry Island and Bourke Point with North Island of The Westerns a little on the port bow. 5 10

Keep thus until the west side of North Wooded Pine Island is over the west side of Clarke Rock, bearing 158° . Now turn slowly northward to pass between Spohn Spit, marked by a red spar buoy and Cameron Rock, marked by a black spar buoy. When past the latter and before Tryon Island is over the southwest dry rock off it, see that Southeast Wooded Pine Island is its own width open southwestward of Clarke Rock, bearing 148° . Steer 328° on this range, to pass between Pawsey Rock black spar buoy and Gahan Rock. 15 20

Pass 50 yards (45^m7) west of The Pig, heading well inside O'Donnell Point until Tryon Island is open northeast of The Pig, when steer for the highest part of Gillford Rocks, passing 150 yards (137^m2) southwest of the small dry rock south of O'Donnell Point. Keep thus, until the channel east of Gillford Rocks is closed, when haul northward, opening the channel again, and keep this group close on board, passing between the southeastern rock and the red spar buoy off O'Donnell Point. The west end of the small island off O'Donnell Point is marked by a white beacon. For a quarter of a mile after leaving this narrow channel, steer for the middle of the gap between Passage and Jacques Islands; then haul northward, so as to bring Passage Island about 011° on the starboard bow. Steer thus until the channel between Passage and Jacques Islands, marked by a red spar buoy, opens, when proceed as directed on page 180. 25 30 35

There is another channel from O'Donnell Point to Milligan Island leading through the dredged cut east of Jacques Island. (*See* page 176.) 35

CHAPTER VII

MOOSE POINT TO McCOY ISLANDS, WITH PARRY SOUND

DATUM.—See page 1.

Chart 2289.

- 5 **Milligan Island**, narrow and 15 feet (4^m6) high, is situated 300 yards (274^m3) southward of the Jubilee Island Group (*see below*). A shallow rocky bank extends eastward from the group leaving, however, a narrow passage close to the islets on the southeastern side of Starvation Bay. The inside Channel formerly passed over this bank, but has been recently changed to east of Milligan
10 Island (*see below*).

Hood Reef, with less than 6 feet (1^m8) of water on its eastern end, lies half a mile southeastward from Milligan Island. It is more than one-quarter of a mile eastward from the track of vessels.

- 15 **Eagar Rock**, with less than 6 feet (1^m8) over it, is the most eastern of four rocks lying northwest and southeast and is situated half a mile southwestward from Milligan Island, and 250 yards (228^m6) westward from the vessel's track.

Ha Ha Rock is the most western of the four rocks above mentioned. It has 7 feet (2^m1) over it and lies nearly half a mile northeastward from Eagar Rock.

- 20 **Minnie Rock**, with 15 feet (4^m6) of water over it, lies two-thirds of a mile westward of Eagar Rock.

- Buoys and Beacon**.—Abreast Eagar Rock the channel turns to the north-eastward to pass east of Milligan Island through a dredged cut 50 feet (15^m2) wide and 13 feet (4^m0) deep. The dredged channel is marked by a white beacon on a small rock island about 100 feet (30^m5) eastward of Milligan Island and two
25 red and three black spar buoys.

Jubilee Island, (*Lat. 45° 06' N., Long. 80° 07' W.*) is the name given to the eastern island of the group lying southward of Moose Point above mentioned, and it can be recognized by its summer house and flagstaff. There is a private wharf here.

- 30 **Buoy**.—A black spar buoy is moored about 500 feet (152^m4) north of the northwest point of Jubilee Island, and off the west end of Manitou Island.

Manitou Island, small and sparsely wooded, lies about one cable north-east of the west end of Jubilee Island. There is a small wharf and shelter on its west side.

- 35 **Starvation Bay** is the name given to the clear space eastward of Jubilee Island, and good though limited anchorage may be had in the place indicated on the chart, in 5 fathoms (9^m1), and out of the way of passing vessels.

Chart 2289.

McQuade Island, 16 feet (4^m9) high, with a few bushes on it, is the outer one of a large group lying westward of Moose Deer Point; these islands are so close together that they appear from seaward as a headland. A shallow spit extends 350 yards (320^m0) northwesterly from the northwest end of McQuade Island. 5

Armstrong Rock is a small danger, with 2 feet (0^m6) of water on it, lying a quarter of a mile southward from the west end of McQuade Island.

Channel Rock is the southeastern and highest of a group of bare rocks lying a quarter of a mile northwestward of McQuade Island, the navigable 10 channel, however, being contracted to half that distance by shoal water from McQuade Island. Channel Rock is 11 feet (3^m4) high and conspicuous; with deep water close to its eastern side.

Wagstaff Rock, with 7 feet (2^m1) of water on it, lies a third of a mile eastward from Channel Rock and nearly two-thirds of a mile west of Cone Island. 15

Cone Island, 15 feet (4^m6) high, is a sharp-topped, small bare rock lying half a mile westward of Moose Deer Point. One-quarter of a mile north of the island lie two small dry rocks close east of the track.

McKechnie Rock, 2 feet (0^m6) high, is situated a third of a mile westward from Cone Island, and the ship's track is between them as indicated by 20 the broken line on the chart. A passage also exists between McKechnie Rock and the McQuade Island Group, with a depth of 15 feet (4^m6).

Moose Deer Point is the south entrance point of **Moon River Bay**, and between it and O'Donnell Point runs a long, narrow bay called **Twelvemile Bay**, which is unsurveyed. 25

Smooth Island, 20 feet (6^m1) high, lies 400 yards (365^m7) eastward of the track and half a mile northeastward from Cone Island. Southwestward of this island, distant 300 yards (274^m3) is **Haight Rock**, with less than 6 feet (1^m8) of water on it, on the bank extending southward from the island. This same bank, extending northward from the island and joining Menimmenis Island is covered 30 with bare rocks close to the vessel track.

Buoy.—Haight Rock is marked by a red spar buoy.

Menimmenis Island lies on the east side of the passage, and a little more than three-quarters of a mile northward from Moose Deer Point; it may be easily recognized from the north by the high steep bare face on the north point. 35

Track Island is small, wooded, and 15 feet (4^m6) high, lying a quarter of a mile northwestward of Menimmenis Island, and between them is the ship's track, the west side being marked by a black spar buoy.

Beacon.—On an island 10 feet (3^m0) high, lying one-eighth of a mile south-east of Track Island, is a white triangular slatwork beacon 15 feet (4^m6) high. 40

The passage between Track Island and **McCurry Rocks** is very much contracted by the shallow bank from the former, and no vessel should attempt this portion of the channel without local knowledge.

Chart 2289.

It is possible to carry through a depth of 15 feet (4^m6) in the right track, but it would be useless to attempt to give directions. The master of a vessel should follow the track shown on the chart as closely as possible, assisted by the 5 buoy above mentioned, taking care to avoid the rock, with 3 feet (0^m9) of water on it, lying 200 yards (182^m9) southward of the southeastern islet of the Track Islet Group. A black spar buoy is moored southward of this rock.

From McQuade Island to Lone Rock, there is a chain of shoals, leaving, however, a deep water space over three-quarters of a mile in width and a vessel 10 can, in clear weather, run through by keeping the western extremity of Taylor Island (*see* page 189) in line with the east side (trees) of Sandy Island (*see* page 194), bearing about 338°. When the mark is on, the sudden termination of the dark pines on Sandy Island contrasts with the lighter colour of the bare islets in the foreground. This passage eastward of Lone Rock shoals, however, 15 is by no means recommended to a stranger.

The position of a few of the most dangerous shoals between McQuade Island and Lone Rock will now be given:—

Wabuno Rock, with less than 6 feet (1^m8) on it, lies 1·1 miles northwesterly from Channel Rock. A spot, with 9 feet (2^m7) on it, lies 300 yards (274^m3) 20 northwestward of Wabuno Rock, a depth of 20 fathoms (36^m6) will be found close westward of these two dangers.

Mercer Rocks.—Two rocks, 3 feet (0^m9) high, lie one-third of a mile north-westward from the western channel rock. Shallow water extends 200 yards (182^m9) southwestward, 150 yards (137^m2) northeastward, and the same distance 25 northwestward, from these two rocks. The southwest side is steep-to at 40 yards (36^m6).

Harris Bank nearly circular in shape and one-quarter of a mile in diameter, lies, with its shallowest spot, of less than 6 feet (1^m8) on its north edge, over half a mile northeastward from Wabuno Rock. Another narrow bank, one-third 30 of a mile long northeast and southwest, lies, with its shallowest spot, of less than 6 feet (1^m8), on the eastern edge, over half a mile northeastward from Wabuno Rock.

Dauphine and Pelican Rocks, each with 13 feet (4^m0) of water on it, lie rather more than a mile and a half northerly from Wabuno Rock; the former 35 is situated 1½ miles westward from Haystack Rock (*see* page 183).

Barbara Bank consists of three distinct patches of shallow rocks, the middle one being awash and a little over 1½ miles eastward from Lone Rock.

Hans Rock (*Lat.* 45° 08' N., *Long.* 80° 12' W.), with 4 feet (1^m2) of water on it, bears 139° and is distant 1·9 miles from Lone Rock.

40 A 3-fathom (5^m5) patch lies a little over a mile southeastward from Hans Rock.

A 3½-fathom (5^m7) patch bears 109°, distant nearly half a mile, from Hans Rock.

Two patches, with 16 and 13 feet (4^m9 and 4^m0) of water over them lie, 45 respectively, one-quarter and one-third of a mile northward from Hans Rock.

A 21-foot (6^m4) patch lies nearly three-quarters of a mile northwest of Hans Rock.

Ouida Rock, with a depth of 7 feet (2^m1) over it, bears 298°, distant seven-eighths of a mile from the same rock.

Chart 2289.

Lone Rock is an isolated small light-coloured rock of granite character 3 feet (0^m9) high. As it is very small, it is only on very calm days that it appears like a dry rock. Usually the swell and waves, beating against its abrupt western face, give it the effect of a rock covered, or awash.

5

Lone Rock bears 307°, distant 8 miles, from O'Donnell Point.

Buoy.—A red spar buoy is moored on the western side of Lone Rock.

Caleb Island (*see* page 000), is the nearest land to Lone Rock, bearing from the latter 027°, distant 3 miles. Its great distance offshore renders Lone Rock and the shallow spots southeastward of it, very formidable dangers in thick weather. A patch, with 16 feet (4^m9) on it, lies a quarter of a mile southward from Lone Rock, and a rock, with 7 feet (2^m1) on it, a third of a mile southeastward from the same. Midway between these two shoal spots lies another patch, with 15 feet (4^m6) of water over it.

10

Three patches, each with 18 feet (5^m5) of water over them, lie east and west 350 yards (320^m0) apart from each other, the centre one three-quarters of a mile southeastward from the Lone Rock.

15

Two patches, with 15 and 19 feet (4^m6 and 5^m8) of water over them, lie a little over one-third of a mile, 105° and 077°, respectively, from Lone Rock.

Haystack Rock a dark-coloured bare islet is conspicuous from seaward, especially in the forenoon with the sun eastward of it. It lies 1¼ miles northwestward from Track Island. It has an almost inaccessible lump on the south extremity shaped like a double tooth, being about 10 feet (3^m0) high.

20

A rock, 10 feet (3^m0) high, lies a little over one-quarter of a mile northeastward from Haystack Rock.

25

Two small dry rocks bear 073°, distant nearly half a mile, from Haystack Rock.

Southwestward about 300 yards (274^m3) from the Haystack Rock, is a rock with less than 6 feet (1^m8) of water over it.

Double Island, 28 feet (8^m5) high and wooded, is divided into two parts, it is the first conspicuous island on the west side of the track south of Copper-head Island, being distant therefrom three-quarters of a mile.

30

It lies seven-eighths of a mile northward of Track Island. Two hundred yards (182^m9) northward from Double Island is a depth of 18 feet (5^m5) close to the western side of the track.

35

Guy Rock, with 11 feet (3^m4) of water on it, lies midway between the eastern extremity of Copper-head Island and Double Island, and 150 yards (137^m2) west of the track.

Copper-head Island, 20 feet (6^m1) high, and situated three-quarters of a mile northward from Double Island, is the southeastern of a large group separated from Frying-pan Island by a channel 200 yards (182^m9) broad and 7 fathoms (12^m8) in depth. There is a summer hotel on this island and a wharf with sufficient water for vessels of light draught. The steamer running between Midland and Parry Sound calls here.

40

Anchorage.—A good anchorage in 5 fathoms (9^m1), mud, may be had in the bay called Copper-head Harbour, northwestward of the island.

45

Gaviller Island, 30 feet (9^m1) high, lies a little over a quarter of a mile eastward of Copper-head Island, and midway between them is the ship's track.

Chart 2284.

Frying-pan Island is about 20 feet (6^m1) high, flat, thinly wooded, and 1 $\frac{1}{4}$ miles long north and south, by a half mile in greatest breadth, its north point, bearing 070°, distant 4 $\frac{1}{2}$ miles from Lone Rock. It is separated from Hardie Island on its northwest side, by a passage fit only for boats. The latter island may be recognized by its dark timber, elevation and three summer houses.

The ship's passage in 1891 was between **Hardie Island** and the pair of islands lying a third of a mile north of the north point of Frying-pan Island, but now vessels pass eastward of this pair of islands, and also east of the black buoy marking the 3-foot (0^m9) rock mentioned below. On the southern part of the eastern coast of Frying-pan Island is a small fishery establishment and small wharf. At the back of this fishery is a snug little harbour, with 4 fathoms (7^m3) of water, in which a short vessel will find good shelter, the entrance to the harbour being 250 yards (228^m5) northward of the houses. On the central part of the eastern coast of this island is the post office and summer colony of **Sans Souci**. The small jetties here have a depth of 13 feet (4^m0) at the outer ends, with sufficient water for small craft between them.

Buoy.—A black spar buoy moored off the entrance to the small cove in Frying-pan Island, opposite Dowell Rock, marks an uncharted rock close westward of the ship's track.

A rock, with 3 feet (0^m9) of water on it, lies a quarter of a mile northward from the north point of Frying-pan Island, being connected thereto by a stony flat over which 12 feet (3^m7) was carried in 1891 (in low stages there may be 3 $\frac{1}{2}$ feet (1^m1) less).

Buoy.—A black spar buoy is moored on the east side of this rock.

A small rock, 8 feet (2^m4) high, is situated a quarter of a mile eastward from the same extremity of Frying-pan Island, the passage being contracted to half that width, by a bank extending eastward from the island, rendering this portion of the channel difficult to take.

Pierce Island, is situated northeastward of Frying-pan Island, and may be recognized by several houses belonging to the Hamilton Canoe Club, which usually camps for the summer months, near the cliffy southwest extremity of the island. Off this point lie two small rocks, the southern of which is one foot (0^m3) above water. This rock, together with the small spit from the east point of Frying-pan Island, narrows the channel to a width of only 100 yards (91^m4), but in which there is a depth of 4 fathoms (7^m3).

Wild Goose Island (Lat. 45° 11' N., Long. 80° 09' W.) took its name from a sloping pine tree which stood near the southern extremity in 1891, with a top branch resembling somewhat a goose on the wing. At present, the picture of a goose in flight is painted on the southern face of the island. A summer residence stands on the summit. The island is situated three-quarters of a mile northward from the end of Frying-pan Island. It is 1 $\frac{1}{4}$ miles southward of the passage between Gauge and Round Islands, and, before the survey in 1891, vessels used to pass between it and a conical bare rock, 15 feet (4^m6) high, lying 350 yards (320^m0) northwest from the south point of Wild Goose Island, but as a rock with 6 feet (1^m8) of (and in low stages there may be 3 $\frac{1}{2}$ feet (1^m1) less) water on it lies on this line, and nearly in mid-channel, this passage should not be used unless the rock is buoyed. It is recommended to pass westward of the 15-foot (4^m6) high rock.

Ajax, Leonard, and Griffiths Islands are three of a large group sheltering the northwestern portion of the inside passage now under description.

Chart 2284.

Gauge Islands are a group of small islets northeast of, and separated from the northern one of the large group just mentioned, by a shallow passage 250 yards (228^m5) wide. The name was given to this small cluster, on account of a batten fastened to the northeastern islet, to indicate to the Midland and Parry Sound steamer the depth of water in South Channel. Deep water will be found close to the northeast side of Gauge Islands. 5

Caution—A sunken rock, with not much water on it, is reported to lie about midway between McBrien and Gauge Islands, a little more than a third of a mile distant, and bearing 285°, from the northeastern islet. 10

During the progress of the survey in 1891, the surveying steamer *Bayfield* anchored for the night frequently between Griffiths and Leonard Islands, in 5 fathoms (9^m1) mud bottom, and sometimes between Griffiths Island and the northern Gauge Island, in 8 fathoms (14^m6) over sand, and in approaching these anchorages from Wabuno Channel, used to keep the southeastern Black Rock in line with the middle of **Chamberlain Island**, bearing 035°. 15

Round Island, small and wooded, is situated 350 yards (320^m0) northeastward of Gauge Islands, the ship's channel between them being further contracted by a shoal, making off westerly 150 yards (137^m2), from the southwest point of the former. 20

Buoy.—A red spar buoy marks the end of the shoal extending 2 cables southwestward from the island, which lies one-quarter of a mile eastward of Round Island.

McBrien Island, about 30 feet (9^m1) high, is a conspicuous wooded island with a summer residence upon it, lying one mile northwestward from Round Island, and a quarter of a mile southwest of Turning Island. 25

William Island, 33 feet (10^m1) high with a few trees on it, is situated 1 $\frac{7}{8}$ miles westward from Round Island. Two rocks, awash, lie near its southeast side from which shallow water extends about 50 yards (45^m7) southward.

Edward Island, low and wooded, lies 1 $\frac{2}{3}$ miles westward of Round Island and a half mile northeastward of the Caleb Island Group, and between them there is no passage for a ship. The north side of Edward Island has a depth of 4 fathoms (7^m3) close to it, in consequence of which, vessels using this passage (*see below*), pass close to it to avoid a dangerous reef, the southern end of which approaches to 150 yards (137^m2) of the north side of Edward Island. 30 35

Black Rocks, a third of a mile southeastward from Edward Island, are two in number and dark coloured as the name indicates. The southeastern one is the larger, saddle-shaped, and 8 feet (2^m4) high, and both are steep-to, with the exception of a flat which makes off north and northeastward a distance of 150 yards (137^m2). 40

Caleb Island, 14 feet (4^m3) high, is situated a little over 3 miles, 028° from Lone Rock and 1·2 miles, 110°, from Gull Rock. It is the largest of a group of bare islets and rocks, the northern of which is dark with rough surface. Between this north one and a similar looking rock, lying 300 yards (274^m5) northeastward of it, there is a deep passage by keeping the north side of Edward Island in line with the corresponding extremity of the northern island of the Griffiths and Leonard Island Group, bearing 087°. 45

A patch, with 12 feet (3^m7) of water on it, lies 300 yards (274^m3) eastward from the northern dark rough rock of the Caleb Island Group, and the leading mark just given for the channel passes 150 yards (137^m2) northward of this patch. A reef, with depths less than 6 feet (1^m8) extends nearly a quarter of a mile south from the island. 50

Chart 2284.

Sitric Rock, with 9 feet (2^m7) of water over it, lies over a third of a mile southwestward from Caleb Island, and there is no passage between them.

Caleb Island to Starvation Bay.—A smooth inside passage with depth of 5 11 feet (3^m4) (in low stages there may be $3\frac{1}{2}$ feet (1^m1) less) exists between these places, and is used by the Midland and Parry Sound light draught steamer, in conjunction with Wabuno or South Channels. No vessel should attempt to go through this passage for the first time by the directions alone, but should be guided by some one well acquainted with the channel.

10 **South Channel** is the name given to the passage, with least depth of 13 feet (4^m0) in 1935, separating the southeast coast of Parry Island from the mainland. The track used is on the mainland side of **McLarens** and **Isabella Islands**, the shoalest places being **Devils Elbow**, **Seven Mile Narrows**, **Five Mile Narrows**, and **Two Mile Narrows**.

15 A passage, with a depth of 4 feet (1^m2), exists also on the Parry Island side via **Indian Docks Channel** and **Menomine Channel**. There is good water for the whole length of the latter track excepting at the two localities above mentioned.

20 At the Indian Docks Channel, so called on account of the wharf-like appearance of its rocky shores, the length is nearly half a mile, with a depth of 4 feet (1^m2). At Menomine Channel, the reef with 7 feet (2^m1) of water on it, connecting the southwest side of Isabella Island to Parry Island is only 10 yards (9^m1) wide and 38 yards (31^m7) long.

25 By South Channel, the distance from Lone Rock to Parry Sound Harbour is $17\frac{1}{2}$ ($15\frac{1}{4}$ nautical) miles; by Wabuno Channel the distance between the same points is $23\frac{1}{2}$ ($20\frac{1}{2}$ nautical) miles; the gain therefore by South Channel is 6 statute miles. The length of the inside channel from Starvation Bay (*see* page 180) to **Turning Island**, eastward of Frying-pan Island (*see* page 184) just briefly described, is 9 (8 nautical) miles with a depth of 11 feet (3^m4).

30 As it is concluded that no vessel would attempt South Channel for the first time, without some one on board possessing local knowledge, the usual detailed description of the features in this picturesque channel will be omitted.

35 Brief directions will, however, now be given, which with the track marked on chart No. 2284, assisted by the following lights and buoys, may assist somewhat in guiding a light draught vessel through.

Turning Island light (*Lat.* $45^{\circ} 13' N.$, *Long.* $80^{\circ} 10' W.$).—A *flashing white* light is exhibited, on top of the white pyramidal beacon erected on the southern end of the island. It stands 30 feet (9^m1) high and is visible 3 miles. Turning Island lies over one-quarter of a mile northeastward from McBrien 40 Island, and is steep-to on its south and west sides.

Cosy (Beauty) Island light.—A *flashing white* light is exhibited on top of the white pyramidal beacon erected on the northwest point of the island, is 30 feet (9^m1) high and visible 3 miles. Cosy (Beauty) Island is situated on the east side of the channel, one mile northward from Turning Island; the west 45 shore is steep-to.

Beacon.—A white diamond-shaped daymark, with red vertical stripe, supported by an iron pole 9 feet (2^m7) high, is erected on **Ryders Rock**, on the east side of the channel and 220 yards (201^m2) southwest of **Flossie Island**. A summer residence stands on the summit of the island.

50 **Maud Island Shoal**, has been entirely removed and swept to a depth of 13 feet (4^m0).

Chart 2284.

Beacons.—A white beacon is located on the northwest side of Flossie Island, and a similar beacon on a rock southwestward of Flossie Island.

On the summit of the islet three-eighths of a mile northeast of Maud Island is a summer home. A large anchor, painted white, imbedded on the east side of the islet is conspicuous. The channel passes close eastward of this islet. 5

Devils Elbow.—The channel has been widened to 75 feet (22^m9) and swept to a depth of 13 feet (4^m0). Two pairs of day beacons, erected on McLarens Island and the main shore, mark the centre line of the dredged cut through Devils Elbow Channel. One black and two red spar buoys mark the channel, and a black spar buoy marks the end of the sand point extending from the south side of McLarens Island. 10

Lower Seven Mile Narrows.—This channel was swept to 13 feet (4^m0) and widened to 50 feet (15^m2) at the lower end, gradually increasing in width to 75 feet (22^m9), then narrowing to 50 feet (15^m2) as the Seven Mile Narrows proper is approached. Two black spar buoys and two red spar buoys mark the lower dredged cut, where it is about 65 feet (19^m8) wide. At lower Seven Mile Narrows, there is a white painted mark on the rock face of the mainland shore. 15

Seven Mile Narrows.—This channel has been widened to 48 feet (14^m6) and swept to a depth of 13 feet (4^m0). This narrows is equipped with glance booms on both sides. 20

Five Mile Narrows.—A channel, about 50 feet (15^m2) wide and swept to a depth of 15 feet (4^m6), leads between what is known as Hawkins Point on McLarens Island and Milton Island. (Milton Island is unnamed and not numbered on the chart, but is located between McLarens Island and the island on which the elevation "60" is shown.) 25

Light.—A *flashing white* light is shown, at an elevation of 20 feet (6^m1), from a pole with two triangular daymarks, on the north side of Milton Island, at the lower entrance to Five Mile Narrows. The light is unwatched. The channel is marked by one red and one black spar buoy. 30

Vessels are requested to slow down to not more than five miles per hour when passing through this narrows, to prevent erosion of both banks which consist of soft sand and will eventually refill the dredged cut, if this precaution is not taken.

Beacon.—A white beacon with red stripe stands on the northwesterly point of the second island (elevation 98 feet (29^m9)) west of McLarens Island. 35

Three Mile Gap light.—A *flashing white* light is exhibited from the top of a pole, with two triangular daymarks, erected on a small island lying on the east side of the channel and distant 2½ miles northeastward from Five Mile Narrows light. The light is 20 feet (6^m1) high and is visible 2 miles. 40

Beacon.—A white beacon, with a black stripe, stands on the opposite side of the channel from the light.

Lower, Centre and Upper Two Mile Narrows.—The Lower and Centre Two Mile Narrows have been widened to 75 feet (22^m9) and swept to a depth of 13 feet (4^m0). The channel is marked by five red and five black spar buoys. 45

The Upper Two Mile Narrows is about 45 feet (13^m7) wide and has been swept to a depth of 13 feet (4^m0); the upper entrance has been swept to the same depth and widened to 100 feet (30^m5). This narrows is equipped with glance booms on both sides.

Chart 2284.

A white diamond-shaped daymark, with red vertical stripe, supported on an iron pole 6 feet (1^m8) high, stands on **Lawrence Rock**, on the east side of the channel immediately south of Two Mile Narrows.

- 5 **Rose Point bridge.**—Both sides of the centre abutment have been swept to a depth of 13 feet (4^m0). Each channel is 50 feet (15^m2) wide and the rock shoal formerly located to the south of the bridge has been entirely removed.

- Directions.**—Having passed close westward of the white beacon light on Turning Island, so called from its being the turning point in this portion of the channel, steered 013° for the bare south point of **Shasha Island**, distant 1½ miles, keeping Cosy (Beauty) Island light a little on the starboard hand. When past Cosy (Beauty) Island beacon light haul to the northeast, pass eastward of a little rock 3 feet (0^m9) high, and northwest of Ryders Rock beacon, marking a rock, awash, lying 200 yards (182^m9) southwestward of little Flossie Island.
- 15 Proceed through the narrow but good passage westward of the little Flossie Island, thence eastward of Maud Island situated two-thirds of a mile northward from Flossie Island. When a quarter of a mile from McLarens Island, the vessel passes through a narrow channel, nearly in the middle of which is a rock, with 4 feet (1^m2) of water on it. The vessel should pass northwest of it and fairly
- 20 close to the little island on the port hand, with 11 feet (3^m4) of water (in low stages there may be 3½ feet (1^m1) less).

- Now follow the broken line shown on the chart through Devils Elbow, Seven Mile, Five Mile and Two Mile Narrows, assisted by the before mentioned lights and buoys, to Parry Sound Harbour, being careful to signal *three prolonged blasts* of the whistle for the opening of Rose Point swing bridge before
- 25 passing the northeast point of Isabella Island (see page 206).

- Wabuno Channel.**—This is the name given to the passage eastward of The Umbrellas and westward of Parry Island. From Lone Rock on the south to Rose Island on the north, the length of the passage is 11½ (10¼ nautical) miles
- 30 with a depth of 15 feet (4^m6) (in low stages there may be 4½ feet (1^m3) less).

A vessel bound to Parry Sound or Depot Harbour from Midland, by the use of this channel saves a distance of 12½ (11 nautical) miles. The features and dangers of this ship's track will now be described commencing at the south end.

- 35 **Beaver Rock**, with a depth of 13 feet (4^m0) over it, lies a third of a mile westward of the Wabuno Channel track and 1¼ miles northward from Lone Rock.

Depths of 21 feet (6^m4) will be found one-third of a mile north of Lone Rock.

- 40 A patch, with 18 feet (5^m5) upon it, is situated one mile northwestward from Lone Rock.

Gladwyn Rock, with 9 feet (2^m7) of water on it, is a dangerous obstruction lying a little more than 1½ miles northward from Lone Rock.

- 45 **Dehring Rock**, small and with less than 6 feet (1^m8) of water upon it, is situated 2½ miles north from Lone Rock, and a third of a mile westward of the track.

Gull Rock (*Lat. 45° 12' N., Long. 80° 13' W.*), lying 300 yards (274^m3) westward of Wabuno Channel, is a conspicuous and important feature in the channel, about 7 feet (2^m1) high.

Chart 2284.

Beacon.—Upon Gull Rock is erected a white beacon with a black square as topmark.

With the exception of a shallow spur, making off 30 yards (27^m4) from its northeast side, Gull Rock is steep-to and therefore very serviceable as a mark to steer for. It bears 006°, and is distant 3 $\frac{1}{4}$ miles, from Lone Rock, and 185°, 2 $\frac{3}{4}$ miles from Sister Rock beacon. In fact, the three objects are as nearly as possible in line. 5

Rigby Island, 17 feet (5^m2) high, and bare, with a small dome-shaped top, lies three-quarters of a mile northeastward from Gull Rock. 10

Doty Rocks consist of two distinct patches, with 4 and 6 feet (1^m2 and 1^m8) of water on them, the latter and outer spot lying 1 $\frac{1}{4}$ miles northward from Gull Rock.

Buoy.—A black spar buoy is placed close east of the outer or 6-foot (1^m8) patch. 15

Taylor Island, 15 feet (4^m6) high is a round island lying 1 $\frac{1}{2}$ miles northward from Gull Rock, one-third of a mile westward from Doty Outer Rock and rather over a third of a mile westward of the vessel's track.

Sarah Island, situated nearly 1 $\frac{1}{2}$ miles northward of Rigby Island, 15 feet (4^m6) high, is the next conspicuous feature on the east side of Wabuno Channel after passing Rigby Island, and lies a quarter of a mile eastward of the track. A depth of 10 fathoms (18^m3) will be found 100 yards (91^m4) westward of Sarah Island. 20

There is no passage for a vessel eastward of Sarah and Rigby Islands.

Morgan Islands are a cluster of islands, the western of which lies one-third of a mile north of Sarah Island and a little over one-quarter of a mile eastward of the vessel's track. 25

Boyd Group is another cluster of islands lying half a mile westward from the Morgan Islands. From the eastern of these islands, a spit makes out 225 yards (190^m3) easterly to a distance of 250 yards (228^m6) from the vessel's track. 30

Bald Island lies 200 yards (182^m9) southwest of the Boyd Group and a rock with 13 feet (4^m0) of water on it, lies 350 yards (320^m0) southeastward of the southeast tip of the island.

Sister Rock lies a little over three-quarters of a mile northward from Sarah Island, and is the southeastern entrance to an intricate channel leading to Good Cheer Island, 1 $\frac{1}{4}$ miles further north. This part of the channel is difficult to describe intelligently to a stranger, who, as before remarked, should take a pilot for the first time through all these channels. 35

A shallow bank makes out over one-third of a mile northward from Sister Rock, and a dry rock lies on its northern edge. 40

Beacon.—A white steel skeleton beacon is erected on the summit of Sister Rock.

From **Bath Islands**, lying 200 yards (182^m9) westward of Sister Rock, a reef extends in a northeast direction 250 yards (228^m6) from the last dry rock, terminating in a depth of 11 feet (3^m4). 45

Chart 2284.

Clearing mark.—To pass southeast of this reef, keep the northwest side of Taylor Island touching the southeast side of Bath Islands, bearing 198° .

Another mark, for leading over the deepest water here, is to keep the west side of the clean little wooded island, called Range Island, in line with the narrow gap eastward of **Skunk Island**, bearing about 008° .

Good Cheer Island, the western end of which is situated $1\frac{1}{4}$ miles northwestward from Sister Rock beacon, is half a mile long east and west and 200 yards (182^m9) broad, and, as stated below, the ship's passage is close to the two points on its west side, which fall steeply to a depth of 4 to 5 fathoms (7^m3 to 9^m1)

There is a shallow spot, with 9 feet (2^m7) of water over it, lying one-quarter of a mile north from the northwestern end of Good Cheer Island.

A narrow and tortuous channel exists eastward of Good Cheer Island, and is sometimes used by shallow draught steamers from Parry Sound Harbour to Midland in conjunction with Wabuno Channel, but it is unsurveyed. This inner passage is locally known as the **Long Sault**, and its north entrance is east of Good Cheer Island, and southern entrance southward of **Campbell Island** (not the rock), an approximate length of $3\frac{1}{2}$ miles.

Campbell Rock, 32 feet (9^m8) high, with deep water close to its east and southeast sides, lies on the western side of the ship's passage, and is distant from Good Cheer Island 170 yards (155^m4). The navigable channel, however, is narrowed to half that width by a rock in mid-channel, with 7 feet (2^m1) of water on it, leaving a depth of 4 fathoms (7^m3) between it and Good Cheer Island by keeping close to the latter.

A depth of 18 feet (5^m5) can be carried through westward of this danger, by keeping Campbell Rock close on board, but the passage on the Good Cheer Island side is wider and therefore the one recommended.

Niger Rock, awash, is an equally dangerous obstruction lying a quarter of a mile southwest from Iron Rock beacon (*see below*) the track being between them.

Buoy.—A black spar buoy is moored east of Niger Rock.

Iron Rock—Beacon.—Iron Rock, 5 feet (1^m5) high, is the most outstanding islet between Oak and Good Cheer Islands. The water is deep close to Iron Rock excepting at the southwest end, whence a shallow spur puts off 50 yards (45^m7). Niger Rock, with its buoy has already been alluded to (*above*), and the ship's track is between the latter and Iron Rock, by keeping Sister Rock beacon in line with the southwest point of Good Cheer Island (usually marked by a flagstaff), bearing 161° . A white diamond-shaped daymark stands near the southern end of Iron Rock.

Oak Island (*Lat.* $45^{\circ} 17' N.$, $80^{\circ} 14' W.$), 14 feet (4^m3) high, is situated $1\frac{1}{8}$ miles northward from Iron Rock and nearly one-quarter of a mile eastward of the ship's track. The exceptional character of its timber renders it unmistakable.

A bank makes off in a southwesterly direction 250 yards (228^m6) from the southwest portion of Oak Island, and a 3-fathom (5^m5) patch lies in the ship's track nearly one-third of a mile northwestward from the south end of the island

A small rocky patch, with 12 feet (3^m7) of water over it, lies approximately little over a quarter of a mile southwest from the southwest extremity of Oak Island, and 300 yards (274^m3) southeast of Sceptre Bank.

Chart 2284.

Buoy.—This patch is marked by a black spar buoy.

Sceptre Bank awash, is situated a third of a mile west from the south point of Oak Island. Several other shoals lie between Sceptre Bank and the broad shallow sankbank from Sandy Island, but as they are not near the track, they will not be described. 5

The coast of Parry Island between Oak and Good Cheer Islands is very much broken up.

Trent Rock, with 7 feet (2^m1) least water upon it, lies a little more than half a mile north from the southwest end of Oak Island and 200 yards (182^m9) eastward of the ship's track. 10

A 3-fathom (5^m5) patch lies on the west side of the ship's track one-quarter of a mile northwestward from Trent Rock.

Griper Bank, with 9 feet (2^m7) of water on it, is the westerly termination of the shoal bank extending a third of a mile from the point about midway between **Liddon Point** and Oak Island, and a quarter of a mile eastward of the ship's track. 15

Clearing marks.—To pass westward of Griper Bank, Trent Rock and the bank from Oak Island, also eastward of Sceptre Rock, keep the west extremity of Rose Island—a low cliffy point—in line with the east side of Palestine Island, bearing true north. Another mark, that will also serve at night, is Carling Rock light just touching the east side of Palestine Island on the same bearing. 20

Caution.—This leading mark leads over the 12-foot (3^m7) patch marked with a black spar buoy. A vessel should pass east of the buoy.

Palestine Island, the south end of which is situated nearly $1\frac{1}{4}$ miles north-westerly from Oak Island beacon, is the largest of the group to which Duke and Owen Islands belong. It is half a mile long northeast and southwest, one-quarter of a mile wide, about 50 feet (15^m2) high and partly wooded. Close to the latter side of Palestine Island the water is deep. 25

Owen Island, oval-shaped and wooded, is situated nearly one-quarter of a mile northwestward from the north end of Palestine Island and 200 yards (182^m9) southward from the dry reef lying close to the southwest extremity of Duke Island. Between them is Clarence Channel. 30

Duke Island, small, 10 feet (3^m0) high, and with a few trees on it, is the northeasternmost of the group which extends in the latter direction $1\frac{2}{3}$ miles from the north point of Sandy Island. A low dry reef extends 100 yards (91^m4) northeastward from the northeast side, and one, of a similar character, makes off the same distance in the opposite direction. 35

There is a passage on either side of Duke Island, the one between it and Rose Island, with 13 feet (4^m0) over sandy bottom, called **Albert Channel**, being the one hitherto used. The passage southwest of Duke Island known as **Clarence Channel** has, however, a depth of 15 feet (4^m6) over rocky bottom (in low stages there may be $3\frac{1}{2}$ feet (1^m1) less) and is the one recommended and now generally used. 40

Hecla Rock, with 6 feet (1^m8) of water on it, lies 270 yards (246^m8) eastward from the north point of the dry reef lying close to the northeast side of Duke Island, and not more than 9 feet (2^m7) over sand can be carried between them. Albert Channel passes north of this rock. 45

Chart 2284.

Pell Island, over a third of a mile in diameter, almost blocks the southwest entrance to Rose Island Channel (*see below*); there is, however, a narrow passage with depth of 3 fathoms (5^m5), by keeping close to the southeast coast of Pell Island, leading to good anchorage northeast of the latter. Pell Island is situated one mile northeastward from Palestine Island, half a mile east of the southwest extremity of Rose Island, and the same distance north of Liddon Point.

Rose Island closes the northern end of Wabuno Channel. It is 2 $\frac{1}{4}$ miles long northeast and southwest and averages half a mile in width. Rose Island Channel follows its south and east coast, and is but a narrow passage with depths of three fathoms (5^m5) except at its northern entrance where vessels, drawing 6 or 7 feet (1^m8 or 2^m1) only, can pass through the narrow gut.

Beacons.—The north entrance to Rose Island Channel is marked by two white and black beacons on Parry Island, and two spar buoys, a red and a black.

Hugh Rock, 11 feet (3^m4) high and bare, is the outer and smaller of two islands lying close to the western extremity of Rose Island.

Cameron Island is the western and smaller of the two islands, lying close to the northwest side of Rose Island, and really appears as part of the latter.

A dry rock, close to the shore, is situated a third of the distance from Hugh Rock to Cameron Island, and rocks, awash, extend from this dry rock 200 yards (182^m9) in a northeast direction. A patch, with 15 feet (4^m6) of water over sand, lies northwestward one-third of a mile from Hugh Rock. A small rock, with 16 feet (4^m9) of water upon it, lies one-third of a mile southwestward from the southwest extremity of Cameron Island.

Directions for Wabuno Channel.—The course and distance, from the position one mile eastward of Hope Island lighthouse to half a mile westward of Lone Rock, are 344°, 16 $\frac{3}{4}$ (14 $\frac{2}{3}$ nautical) miles. Having picked up the rock, pass 200 yards (182^m9) west of it, and bring Gull Rock beacon a quarter of a point on the port bow, steering 012° until 200 yards (182^m9) eastward of the latter. Thence head for Sister Rock beacon, bearing 002°, passing eastward of Doty Rocks buoy.

When Sister Rock beacon is reached, pass midway between it and **Bath Islands**; when 300 yards (274^m3) northward of the beacon see that the west side of Range Island is in line with the gap east of Skunk Island, bearing about 008°, or, that the northwest side of Taylor Island, astern, is touching the south-east side of Bath Islands just past, bearing 198°.

Haul northwestward, so as to pass 150 yards (137^m2) southwestward of **Range Island**, and keep mid-channel between Skunk Island and the string of islands westward of it. Campbell Rock and Good Cheer Island will now be in sight, and the passage between them should be steered for. Keep the western side of Good Cheer Island close on board, to avoid the 7-foot (2^m1) rock in the middle of the passage. When through, keep Sister Rock beacon in line with Boyds flagstaff on the southwest end of Good Cheer Island (if still standing) astern, bearing 161°.

When three-quarters of a mile northward of Iron Rock beacon, the eastern side of Palestine Island, the western clifty point of Rose Island and Carling Rock light will all be in line, and should be steered for (*see caution page 191*), bearing 000°, which will lead in 3 fathoms (5^m5) up to the east coast of Palestine Island, near which the water is deep. Keep a quarter of a mile east of Palestine Island, so as to make an easy curve round the small islet at its north extreme, and proceed through Clarence Channel between Owen and Duke Islands, with 15 feet (4^m6) of water (at low stages there may be 3 $\frac{1}{2}$ feet (1^m1) less).

Chart 2284.

When through, haul gradually northward to pass a quarter of a mile westward of Hugh Rock, and the same distance westward of Rose Island, until abreast the northeast extreme of Cameron Island, whence proceed for Parry Sound Harbour as directed on page 206.

A few of the islands and shoals lying between Lone Rock and the main channel to Parry Sound and west of Wabuno Channel will now be described.

Umbrella Islands (*Lat.* $45^{\circ} 13' N.$, *Long.* $80^{\circ} 15' W.$) are a group, which derive their name, presumably, from a single large pine tree growing upon one of the inside islets of the group, and from that circumstance called **Tree Island**. The northwest island is the largest and has some tall trees upon it, the ground being 15 feet (4^m6) high; it is situated $3\frac{7}{8}$ miles northward from Lone Rock and $3\frac{5}{8}$ miles southward of Sandy Island, being almost connected to the latter by a chain of islets, rocks, dry and sunken, with no passage for a vessel.

Umbrella Ledges take their name from Umbrella Islands, southwest and south of which they lie. As there is no passage between the shoal spots on this bank, only the outside dangers will be described.

South West Shoal, with 14 feet (4^m3) of water on it, bears 211° and is distant $1\frac{3}{4}$ miles from the largest Umbrella Island. As this patch is only 350 yards (320^m0) outside two rocks, with 3 feet (0^m6) of water on them, a vessel should not approach this locality from the west to a less depth than 20 fathoms, (36^m6) which will be found only 200 yards (182^m9) off South West Shoal.

Ricketts Reef, with 12 feet (3^m7) of water on it, bears 188° distant two miles from the largest Umbrella Island. A spot, with 10 feet (3^m0) of water on it, lies 300 yards (274^m3) northward of Ricketts Reef.

South East Rock, 12 feet (3^m7) high, lies, southeast distant three-quarters of a mile from the northwestern and highest Umbrella Island.

Vanguard Rock, small and 2 feet (0^m6) high, is situated three-quarters of a mile westward from the northwest wooded island of The Umbrellas, and another little rock, just showing above water, lies a quarter of a mile southeast from Vanguard Rock.

Hood Patch, with 15 feet (4^m6) of water over it, bears 300° distant nearly $2\frac{1}{2}$ miles from the largest Umbrella Island.

Tribune Island, 10 feet (3^m0) high, is the name given to the southern island of Baker Group, and bears 332° , distant $1\frac{3}{4}$ miles from the largest Umbrella Island.

The cluster nearest Sandy Island, called **Baker Group**, is composed of bare rocks some of which are 11 feet (3^m4) high, the cluster occupying a space of nearly a square mile, north of Tribune Island.

Quilliam Shoal, with 15 feet (4^m6) of water on it, is one of the outermost shoals in this locality and bears 300° , distant $2\frac{1}{4}$ miles from Tribune Island.

Cornwallis Rock, with 9 feet (2^m7) of water over it, lies five-eighths of a mile eastward from Quilliam Shoal.

Coote Island is a compact looking island, 300 yards (274^m3) in diameter, covered with high conspicuous pine trees and lying a quarter of a mile south from the south side of Sandy Island, and $1\frac{1}{2}$ miles north of Tribune Island.

Capel Rock is a rather conspicuous, bare, islet 14 feet (4^m3) high, situated nearly half a mile west from Coote Island.

Chart 2284.

Sandy Island, about 30 feet (9^m1) high, is the largest island of this group, being $2\frac{3}{8}$ miles long, with greatest breadth of $1\frac{1}{4}$ miles; it is well covered with timber.

- 5 The east coast between **Ross Point** and Martyr Islands is broken up by three long but shallow bays, and the coast is fringed by a broad sandbank, under the depth of 3 fathoms (5^m5), which northeastward of Martyr Islands rises very abruptly from a depth of 9 fathoms (16^m5) over mud.

- 10 The west coast is indented by numerous small bays and points, and is fringed by a large number of islands lying on an extensive shallow bank extending nearly 4 miles northwestward.

- 15 **Martyr Islands**, nine in number, lie off the southeast side of the southern part of Sandy Island, being separated from the low eastern point by a shallow passage 275 yards (246^m8) broad. The group is wooded, the highest island attaining elevation of 19 feet (5^m8).

- 20 **Anchorage**.—Good anchorage and shelter may be found, in 14 feet (4^m3) over mud, between the Martyr Group and Sandy Island, and 250 yards (228^m5) north of **Harbour Reef**, the passage being between the latter and the southwestern Martyr Island, care being taken to avoid the sunken rocks lying 300 yards (274^m3) southward of Martyr Islands (*see track on chart*).

Cathcart Island is one of the most conspicuous islands on the western side of Bateau Island (*see* page 199) and Sandy Island Group. The ground is only 7 feet (2^m1) high, but its trees give it a higher appearance; it is $2\frac{1}{4}$ miles northwestward from the southwest extremity of Sandy Island.

- 25 **Claude and Amelia Rocks**, 3 feet (0^m9) high and dark in colour, lie a quarter of a mile apart north and south. They are the most outstanding rocks in this locality, and situated nearly one mile southwestward of Cathcart Island. Claude Rock bears 321° , distant $3\frac{1}{4}$ miles from Tribune Island.

- 30 A bank, with 12 feet (3^m7) of water on it, lies a quarter of a mile westward of Amelia, the southern of these two black-looking rocks.

Beatrice Bank is the name given to the southern portion of the shallow bank, extending $1\frac{1}{2}$ miles southward from Cathcart Island, and on this bank is a rock, with less than 6 feet (1^m8) of water on it, lying a third of a mile southeasterly from Amelia Rock, and $1\frac{1}{4}$ miles northward of Quilliam Shoal.

- 35 **Araxes Bank**, with 12 feet (3^m7) of water on it, is situated $1\frac{1}{4}$ miles westward of Cathcart Island.

Snake Bank.—This dangerous area of shoal water will be described in connection with Main Channel, and the shoals lying westward of the continuous bank will now be particularized:—

- 40 **Drever Rock** (*Lat.* $45^\circ 21' N.$, *Long.* $80^\circ 23' W.$), with 7 feet (2^m1) least water on it, lies $1\frac{3}{4}$ miles southeast from Red Rock lighthouse; a depth of 10 fathoms (18^m3) will be found 300 yards (274^m3) westward of this danger, and there is a channel over three-quarters of a mile wide, with depth of 16 fathoms (29^m3), between this rock and Clarke Rock, for description of which and Knight

- 45 Shoal, *see* page 196.

Wallace Rock, with $13\frac{1}{2}$ feet (4^m1) of water on it, is the most westerly danger of the Snake Island Shoals. It bears 151° , distant $2\frac{1}{8}$ miles from Red Rock lighthouse, and a depth of 10 fathoms (18^m3) will be found 150 yards (137^m2) westward of this rock.

Chart 2284.

Cuba Rock, with 9 feet (2^m7) of water on it, is a dangerous obstruction on the same bearing from the lighthouse, distant rather over $2\frac{3}{4}$ miles.

Bayfield Rock, with 12 feet (3^m7) of water on it, lies a quarter of a mile southerly from Cuba Rock, and is usually marked by a ripple. 5

Clearing mark.—Red Rock lighthouse in line with the ice house at The Minks, bearing 339° , leads a quarter of a mile southwestward of Bayfield Rock and all the Snake Island Shoals.

Caution.—In thick weather, a vessel should not stand into less than 20 fathoms (36^m6), between the Snake Island Shoals and Vanguard Rock. 10

Main Channel to Parry Sound.—This route begins at Seguin Bank, passes south of the Mink Islands Group, north of Snake and Cameron Islands and then trends eastward to Parry Sound Harbour. The features and obstructions of this channel will now be described.

Seguin Bank, under the depth of 10 fathoms (18^m3), is 2 miles long in a southwesterly and northeasterly direction, with a maximum breadth near its northeast end of three-quarters of a mile. The shoalest part has 17 feet (5^m2) of water over white limestone bottom, and its middle, bears 171° , distant 4 miles from the nearest part of South Limestone Island. The same part of the bank, also bears 246° , and is distant $5\frac{3}{4}$ miles from Red Rock lighthouse. 15 20

Light-and-bell-buoy.—Southwest from the southern shoal spot of Seguin Bank is moored a light-and-bell-buoy, No. 1 P, with tall superstructure painted black. The buoy shows a *flashing white* light visible $4\frac{1}{2}$ (4 nautical) miles, and the bell is sounded by the motion of the buoy on the waves. It is fitted with a radar reflector. 25

Caution.—The line of the Snug Harbour leading lights, bearing 071° , leads over the southern part of the shallow portion of Seguin Bank; a vessel of heavy draught should therefore pass south of the light-buoy.

In clear weather, and in daylight, an excellent cross mark for this bank is the corresponding extremities of North and South Limestone Islands in line. Like Stalker Bank of the same depth and character of bottom, the water on Seguin Bank appears to be much shoaler than is actually the case. 30

Richmond Rock, with 12 feet (3^m7) of water on it (in low stages there may be $3\frac{1}{2}$ feet (1^m1) less) is a dangerous obstruction for a heavy draught vessel, situated 261° , distant a little over $1\frac{3}{4}$ miles from Red Rock lighthouse. The mark for leading south of Lawson Rock (*see* page 196) leads also southward of this danger. 35

Buoy.—A black spar buoy is moored on the south side of this danger.

A shoal, with a depth of 14 feet (4^m3) over it, lies about half a mile south-eastward of Richmond Rock. 40

Red Rock, 14 feet (4^m3) high, lies nearly 2 miles east-northeastward of Richmond Rock.

Light.—**Fog signal.**—A *fixed white* light is exhibited, at an elevation of 60 feet (18^m3), from a white concrete tower on Red Rock. The tower is very conspicuous. 45

A fog diaphone sounds *one blast of 2 seconds every 20 seconds*. A shoal, with a depth of 8 feet (2^m4) over it, lies one third of a mile westward of Red Rock.

Chart 2284.

- Lawson Rock**, with 4 feet (1^m2) of water on it, lies nearly two-thirds of a mile westward from Red Rock lighthouse; another shoal head, with the same depth on it, is situated 200 yards (182^m9) northeastward of Lawson Rock.
- 5 Both these spots break in a moderate sea.

Clearing marks.—The whole of Green Island open west of the nearer Mink Island, bearing 338° , leads southwest of Lawson Rock, and the south side of Franklin Island in line with Red Rock lighthouse, bearing 076° , leads south of Lawson and Richmond Rocks.

- 15 **McGowan Rock**, with 10 feet (3^m0) of water on it, is situated a quarter of a mile southeasterly from Red Rock lighthouse.

A rock, with 21 feet (6^m4) least water on it, lies two-fifths of a mile south-eastward from Red Rock lighthouse.

Buoy.—A black spar buoy is moored on the south side of this rock.

- 15 **Knight Shoal**, with 14 feet (4^m3) of water on it, bears 169° , distant $1\frac{1}{2}$ miles from Red Rock lighthouse, and a little less than half a mile southward of the line of the Snug Harbour leading lights. A small rock, with 18 feet (5^m5) of water on it, is situated 275 yards (246^m8) north of Knight Shoal and a quarter of a mile south from the Snug Harbour range.

- 20 **Buoy.**—A red spar buoy marks the 18-foot (5^m5) spot.

Clarke Rock, with 9 feet (2^m7) of water on it, lies 170° , distant nearly $1\frac{1}{2}$ miles from Red Rock light.

- 25 **Clearing marks.**—To pass eastward of the above rocks, and westward of Snake Island Bank, keep Mink Islands icehouse in line with Red Rock lighthouse, bearing 339° . To pass westward of all, keep Red Rock lighthouse in line with the east shore of Shawanaga Bay, bearing 002° .

- A small rock, with 21 feet (6^m4) of water on it, lies $1\frac{3}{4}$ miles eastward from Red Rock lighthouse and half a mile northwestward from Three-star Shoal. As it lies only 150 yards (137^m2) north of the Snug Harbour range, it is a danger
- 30 to heavy draught vessels using the channel.

Buoy.—A black spar buoy marks its position.

- 35 **Three-star Shoal** (Lat. $45^\circ 21' N.$, Long. $80^\circ 22' W.$) is the northern sunken rock of the large area of shoal water extending northwestward from Snake Island and called Snake Bank, which has been alluded to in connection with the outside dangers (see page 194). As little as 4 feet (1^m2) will be found upon the shoalest head of Three-star Shoal, which bears 098° , distant nearly $2\frac{1}{4}$ miles from Red Rock lighthouse. It also lies a third of a mile southward of the line of Snug Harbour leading lights.

- 40 **Light-buoy.**—Northward of this shoal, and northwestward of an 18-foot (5^m5) patch, is moored a red cylindrical light-buoy, No. 8 P, in a depth of 4 fathoms (7^m3), showing a *flashing red* light.

Vankoughnet Ground is a formidable danger to heavy draught ships using Main Channel. It consists of two patches, with 14 feet (4^m3) on the southern and 13 feet (4^m0) on the northern spot. The nearest part of the shoal

Chart 2284.

to the line of Snug Harbour leading lights is distant 300 yards (274^m3), and lies a little less than half a mile northward from the northern part of Three-star Shoal, the line of the leading lights leading almost the same distance from each.

5

Buoy.—A black spar buoy is moored, in 17 feet (5^m2) of water, near the south end of this ground, and one-quarter of a mile northward from Three-star Shoal light-buoy.

Black Rock, is a dark coloured rock 12 feet (3^m7) high. With the exception of a sunken rocky spur extending 50 yards (45^m7) from the south end, it has good water close to it on the channel side. No vessel should attempt to pass northeastward of Black Rock. This rock lies 1 $\frac{1}{3}$ miles eastward from Three-star Shoal and over three-quarters of a mile southward of Franklin Island, and between the rock and the island, there is a passage for vessels to Snug Harbour and Shebeshekong Bay. Black Rock bears 090°, and is distant nearly 3 $\frac{1}{2}$ miles from Red Rock lighthouse, the line joining the two passing a quarter of a mile northward of Three-star Shoal.

10

15

Ariel Rock is a formidable danger, with 6 feet (1^m8) of water on it, lying two-thirds of a mile southwestward from Black Rock. It is separated from the Snake Island Shoals by a lane of water having in it a depth of 11 fathoms (20^m1). Ariel Rock lies 350 yards (320^m0) southwestward of the line of the Jones Island leading lights. See page 199.

20

Buoys.—A red light-buoy, showing a *flashing red* light, is moored on the edge of the 5-fathom (9^m1) line, northeastward of this danger. A red spar buoy is moored close westward of the light-buoy.

25

Arthur Orr Rock, with 17 feet (5^m2) least water over it, is a small pinnacle lying half a mile southward of Black Rock and only 150 yards (137^m2) north-east of the Jones Island range. Masters of vessels should therefore be careful to see they are exactly on the range when in this vicinity.

Light-buoy.—A black light-buoy, showing a *flashing green* light, marks this danger.

30

A rock, with 15 feet (4^m6) of water over it, lies a quarter of a mile southwestward from Black Rock.

Snake Island, a sparsely wooded island, 21 feet (6^m4) high, is situated with its northern extremity, bearing 119°, distant 3 $\frac{1}{2}$ miles from Red Rock light-house. The island is two-thirds of a mile long in a north and south direction, with an average breadth of 150 yards (137^m2). Numerous islets and dry rocks surround Snake Island, the most conspicuous of them being a wooded island, 100 yards (91^m4) in diameter, known as **Little Snake Island**, situated 350 yards (320^m0) eastward of the middle of Snake Island.

35

40

There is anchorage in 4 fathoms (7^m3) close to the north side of Little Snake Island; arriving there from Main Channel by keeping its northwest side touching the southeast extremity of Snake Island, bearing 212°.

Northeastward of Little Snake Island are several rocky patches, with depths on them varying from 7 to 15 feet (2^m1 to 4^m6), the nearest to the line of Jones Island range being Hall Rock.

45

Chart 2284.

Hall Rock, with 13 feet (4^m0) on it, lies two-thirds of a mile northeast from Little Snake Island, and a quarter of a mile southwestward of the Jones Island range.

5 **Buoy.**—A red conical buoy is moored east of the rock.

Telegram Rock, with 4 feet (1^m2) of water on it, is a small spot 350 yards (320^m0) southwestward of the line of the Jones Island leading lights, and nearly half a mile southward from the north Twin Rock.

Buoy.—A red spar buoy is moored northward of this rock.

10 **Twin Rock**, 9 feet (2^m7) high and bare, situated southeastward of Black Rock, is in two parts.

A rock, with 11 feet (3^m4) of water on it, lies 250 yards (228^m6) west from the gap separating the two islets, and being only 100 yards (91^m4) northeastward of the line of Jones Island range, the latter should be exactly kept when passing

15 Twin Rock.

Buoy.—A black spar buoy marks this danger.

Two small rocks, each with 21 feet (6^m4) of water upon it, are situated half a mile northwest and a third of a mile west, respectively, from Twin Rock. Both are very close to the Jones Island range, the former to the northeast and the
20 latter southwest, so that a heavy draught vessel in this locality should slow down and pass southwestward of the following light-buoy.

Middle Ground light-buoy.—A black light-buoy, No. 13 P, showing a *flashing white* light, is moored about 700 yards (640^m1), 267°, from the north Twin Rock, on the southwestern edge of the latter of the above two small rocks
25 and about 200 yards (182^m9) southward of Jones Island range. A black spar buoy is moored southwestward of the former of these rocks, and close to the Jones Island range.

A shoal bank extends 350 yards (320^m0) northeastward from Twin Rock, but as the passage on this side of the latter is not to be recommended for large vessels,
30 the bank will not be described.

Pancake Island is situated one mile eastward of Twin Rock, and is nearly divided at a high stage of water into three parts. The island is 32 feet (9^m8) high and thinly wooded.

A rock, awash, lies 150 yards (137^m2) off the south extremity of Pancake
35 Island, and a rock, with 10 feet (3^m0) of water on it, is situated a quarter of a mile westward from the same point.

Buoy.—A black spar buoy is moored just southward of the rock awash.

A spit makes off the north end of the island 200 yards (182^m9), and shallow water extends the same distance from the eastern side of Pancake Island. There
40 is no recommendable passage for a deep draught vessel between Twin Rock and Pancake Island.

A rock, with 18 feet (5^m5) of water on it, lies slightly over half a mile southeastward of Twin Rock and three-quarters of a mile westward of the southern extremity of Pancake Island.

45 **Buoy.**—A black spar buoy marks the southern edge of this danger.

Chart 2284.

Anchorage.—Good shelter can be had about a quarter of a mile off the east side of Pancake Island, in a depth of 7 fathoms (12^m8) mud bottom, the further northward the better the holding ground.

Hooper Island (Lat. 45° 19' N., Long. 80° 19' W.), 30 feet (9^m1) high with one conspicuous tree, is the northern one of the Bateau Island Group, being connected to the latter by a string of islets and rocks, between which there are passages only for boats. A bank makes off in a northeasterly direction a third of a mile, where there is a depth of 21 feet (6^m4). In a northerly direction is a detached patch, with 15 feet (4^m6) of water on it (in low stages there may be 3½ 10 feet (1^m8) less) lying in the line of the Jones Island range.

Light-buoy.—Northward of this 15-foot (4^m6) patch, and close to the vessel's track is moored a red light-buoy, No. 18 P, painted red, and exhibiting a *flashing red* light. Vessels bound inward steer from this buoy for Spruce Island shoal light-buoy.

15

Gordon Rocks are a small group of bare islets situated 1½ miles south-eastward from Hooper Island, and the north side of them may safely be approached to within 100 yards (91^m4).

Leading lights.—Two *fixed white* leading lights are exhibited, known as the **Jones Range**. The front light is exhibited, at an elevation of 40 feet (12^m2) 20 from a white, square wooden tower on the northwest Gordon Rock; the rear light is exhibited, at an elevation of 63 feet (19^m2), from a white house, surmounted by a small tower, on Jones Island, 2,900 yards (2,651^m8), 132° from the front light.

A small rock, with 15 feet (4^m6) of water upon it, lies 350 yards (320^m0) 25 northeastward from Gordon Rocks lighthouse, and a patch with the same depth is situated nearly a quarter of a mile southeastward of the same. A passage exists between Gordon Rocks and **Crow Island** by keeping nearer the latter.

Bateau Island, about 30 feet (9^m1) high, is the name given to a large island which, together with Sandy Island and the many smaller ones between them, 30 form a group 5 miles long and 2½ miles broad, and between which the passages are fit only for boats. Bateau Island is thickly wooded, especially on the southwest side, and the abrupt termination of the trees on that side renders it conspicuous as a leading mark in conjunction with Little Snake Island, for the portion of the inside channel between the Minks and Franklin Island. 35

Between this large group and Snake Island are several dry rocks and numerous shoals, with no recommendable channel for a ship, but in an emergency a vessel can get through by keeping the eastern side of **Bentley Rock** in line with the north Twin Rock, bearing 035°. Pass 100 yards (91^m4) southeast of the former, keeping the south point of Pancake Island ahead, bearing 068°, and 40 Bentley Rock astern, taking care to pass northward of the reef extending 200 yards (182^m9) westward from **Bogie Rock**, the discoloured water of which will be seen from the deck.

Jones Island, 32 feet (9^m8) high, although not near the channel, is of importance as containing the rear leading light for a portion of Main Channel. 45 For the landing of lighthouse supplies, good anchorage can be had in 3 fathoms (5^m5), over mud, on the southeast side, the approach to which is between Ross Point of Sandy Island and the small island lying nearly a quarter of a mile eastward of it. There is no approach to this anchorage from the westward, as the area of Ross Point is foul. For details of light see above. 50

Chart 2284.

Between Jones Island and Hugh Rock are several islands described in connection with Wabuno Channel (*see* page 000).

5 **Lyon Rocks**, of whitish appearance, in three parts and 10 feet (3^m0) high, lie three-quarters of a mile southeastward of Gordon Rocks, and a quarter of a mile southward of the line joining Gordon Rocks lighthouse and Hugh Rock. The water is good close to the north side of Lyon Rocks, but on the eastern side a shallow bank makes off 300 yards (274^m3).

10 **Reid Islands** are three in number, the eastern one being the largest and thinly wooded; the other two are bare, the southern one attaining a height of 24 feet (7^m3). The passages between the Reid Islands are fit only for small boats.

15 Rocks, with 9 and 6 feet (2^m7 and 1^m8) over them, lie 250 yards (228^m6) west of the northwest and southwest Reid Islands, respectively, and should be avoided by keeping nearer to Gordon Rocks lighthouse.

Borer Bank, with rocks dry, awash, and sunken, extends in a general northerly direction half a mile from the northwestern Reid Island to a depth of 18 feet (5^m5).

Buoy.—A red spar buoy is placed north of this bank.

20 **Nias Islands**, half a mile eastward from the largest Reid Island, are three in number and wooded, the southeastern being 37 feet (11^m3) high. The passage between them and the Reid Islands is not to be recommended.

25 **Nias Rocks** are low and connected to the islands of that name, situated nearly half a mile southwestward, by a bank with less than 12 feet (3^m7) of water on it. A depth of 15 feet (4^m6) will be found at the distance of 200 yards (182^m9) northward of Nias Rocks.

Foster Rock, with 11 feet (3^m4) of water on it, lies 250 yards (228^m6) southwestward from the extremity of the southeastern and highest Nias Island.

30 A patch with 15 feet (4^m6) of water over it, lies with **Jukes Island** bearing 348° , a little open eastward of the largest Reid Island, distant a quarter of a mile. This is a small round flat rock, and can easily be avoided by keeping slightly south of the line joining Gordon Rocks light and Hugh Rock.

McClelland Rock, 300 yards (274^m3) northwestward of the largest Nias Island, is small and has deep water close to it.

35 A small rock, with 13 feet (4^m0) of water on it (in low stages there may be $3\frac{1}{2}$ feet (1^m0) less), lies 275 yards (246^m8) northeastward from McClelland Rock. This danger is distant 200 yards (182^m9) from Spruce Island shoal light beacon and nearly in mid-channel. A red conical buoy is moored on the northern edge of this rock.

40 **Spruce Island** (*Lat.* $45^\circ 20' N.$, *Long.* $80^\circ 15' W.$), 28 feet (8^m5) high, is the name given to the southeastern one of the group generally called the Spruce Islands.

45 Two small rocks, 4 feet (1^m2) high, lie a quarter of a mile southwest from the south extremity of Spruce Island proper. Westward and southwestward of these rocks, **Spruce Island Shoal**, extends 300 yards (274^m3) with 2 to 12 feet

Chart 2284.

(0^m6 to 3^m7) of water on it, narrowing the channel between it and McClelland Rock to less than a quarter of a mile. There is a disused light-tower on the small 4 foot (1^m2) rock on Spruce Island Shoal.

Light-buoy.—A black light-buoy, showing a *flashing white* light, is moored 5 in 26 feet (7^m9) of water, off the southern extreme of Spruce Island Shoal.

A rock, awash, lies 300 yards (274^m3) southward of the south point of Spruce Island, and off it a spit extends 200 yards (182^m9) east.

Buoy.—A black spar buoy marks the east end of this danger.

Carling Rock, 5 feet (1^m5) high, quite bare and about 100 yards (91^m4) 10 in diameter occupies an isolated position half a mile northwest from Cameron Island, and southeasterly, rather over three-quarters of a mile, from the south end of Spruce Island. A dangerous bank extends southeastward and southwestward a quarter of a mile from Carling Rock. There is a disused light-tower on Carling Rock. 15

Light-buoy—Buoy.—A red light-buoy, showing a *flashing red* light is moved on the northern edge of a shoal extending northward from Carling Rock. The southeastern edge of the bank, extending southward from Carling Rock, is marked by a black spar buoy.

A rock, with 13½ feet (4^m1) of water over it, is situated a third of a mile 20 southward from Carling Rock. With the exception of a fringe of shoal water 70 to 100 yards (64^m0 to 91^m4) in extent, the northwest side of Carling Rock is steep-to, and a good broad passage exists on this side of it and between it and Spruce Island, by keeping Scott Island in Kilcoursie Bay in the gap between Davy Island and the main shore, bearing 059°, until Killbear opens northward 25 of both the Sisters, bearing 093°.

Whitchelo Point of the mainland is situated a little over half a mile northward of Carling Rock, and the water is deep between them. From the end of the point, the shore trends eastward one mile to the southwest entrance point of **Kilcoursie Bay** and is steep-to, there being a good passage between it 30 and Davy Island (*see* page 202).

Eagle Rock, with 5 feet (1^m5) of water upon it, is the outer end of a very shallow spit extending a third of a mile southwesterly from Whitchelo Point. The rock is also half a mile northwestward from Carling Rock lighthouse. It is steep-to on its south and southwest sides and is too far north to affect vessels 35 proceeding to and from Depot or Parry Sound Harbours.

Buoy.—A black spar buoy is moored close southwest of this rock.

A channel, known locally as the "S" Channel, and occasionally used by motor-boats in rough weather, in the passage from Parry Sound to Pointe au Baril, passes north of Spruce Island, with a least depth of 9 feet (2^m7). 40

Channel.—A channel for small craft, with a depth of 7 feet (2^m1) which is suitably buoyed, called **Canoe Channel** lies northward of Squaw Island. From this channel, small craft may proceed south of Tindal Point, and thence join the main channel north of Carling Rock. A red spar buoy is moored eastward of Tindall Point and a red and a black spar buoy westward of Eagle Rock. 45

Chart 2284.

A rock shoal of considerable area, with only 2 feet (0^m6) over the shoalest part, lies about 350 feet (106^m7) southwest of Eagle Rock, near the eastern entrance of the "S" Channel.

5 **Buoy.**—This shoal is marked by a red spar buoy.

Cameron Island to Parry Sound Harbour.—The distance between the north point of Cameron Island and the entrance to Parry Sound Harbour is 9 $\frac{1}{4}$ (8 nautical) miles. Cameron Island is situated nearly midway between Red Rock lighthouse and the harbour, and from Cameron Island to the harbour
10 there is very little difficulty in the navigation. The western 3 miles of this track lies between the coast of Rose Island together with **Parry Island**, and the promontory of the mainland ending in Killbear Point.

Davy Island, 60 feet (18^m3) high and thinly wooded, is separated from the western portion of this promontory by a channel 300 yards (274^m3) wide
15 and depth of 5 fathoms (9^m1), but from the deck of a vessel appears part of the main shore. A reef makes off the west point of Davy Island 250 yards (228^m6).

Davy Rock, with 4 feet (1^m2) of water on it, is an extremely small rock surrounded by deep water, lying rather over a quarter of a mile southwestward from the eastern extremity of the island of that name.

20 **Buoy.**—A black spar buoy is moored close south of this rock.

Scott Island, 7 feet (2^m1) high, small, with a few tall trees on it, lies in Kilcoursie Bay, and has been mentioned above in connection with the leading mark northwestward of Carling Rock.

Anchorage can be had in this bay northward of Scott Island in 6 fathoms
25 (11^m0), and a vessel may pass on either side of the latter, which is fairly steep-to.

Sister Islands, two in number are situated one mile eastward of Cameron Island (*see* page 192). The northern one is 33 feet (10^m1) and the other 47 feet (14^m3) high, and both are remarkably clean, there being 10 fathoms (18^m3)
30 close to the north side of the northern one, and a good passage between them, as well as a 5-fathom (9^m1) channel between the southern one and Rose Island.

A narrow island lies 300 yards (274^m3) westward of the south Sister, and a vessel may pass between it and Rose Island. Three-quarters of a mile westward of the Sisters is a snug little bay in Rose Island in which a vessel may anchor in
35 3 or 4 fathoms (5^m5 or 7^m3).

Light.—A *flashing green* light is shown, at an elevation of 32 feet (9^m8), from a white pole on which is mounted a white daymark. On the north side of the northern Sister Island.

Cousin Island, 41 feet (12^m5) high, with a few trees on it, lies a quarter of
40 a mile off the Killbear Point shore and three-quarters of a mile westward of Killbear Point light. A vessel may pass northward of Cousin Island, which has deep water on all sides excepting at the western extremity, whence a bank makes out 350 yards (320^m0), ending in a rock, with 7 feet (2^m1) of water on it.

Killbear Point (*Lat.* 45° 20' N., *Long.* 80° 10' W.), is a narrow projection
45 extending southerly at the termination of the promontory above mentioned; the water south of the point is deep.

Chart 2284.

Light.—A *flashing white* light is exhibited, at an elevation of 37 feet (11^m3), from a white cylinder surmounted by a red lantern, on Killbear Point.

Anchorage, on the east side of this point, may be obtained in 6 fathoms (11^m0) over mud. 5

Longs Island, 45 feet (13^m7) high, is a picturesque island situated three-quarters of a mile eastward of the Sisters. Deep water exists between it and Parry Island, from which it is distant 200 yards (182^m9). Between the Sisters and Longs Island is the narrow and shallow entrance to Rose Island Channel (see page 192). Not more than 6 feet (1^m8) can be carried through this narrow 10 gut; a little blasting, however, would render the entrance safe for a light draught steamer, which, when through, will find not less than 3 fathoms (5^m5) in the rest of the channel.

Depot Harbour.—From Longs Island the coast of Parry Island runs nearly straight in a southeasterly direction 2 $\frac{3}{4}$ miles to **Cadotte Point**, the west entrance 15 point to Depot Harbour, and, with the exception of the first three-quarters of a mile, is remarkably steep-to. Depot Harbour is one of the many excellent harbours in the vicinity of the town of Parry Sound, and takes its name from being the landing place in past years of the supplies for the Parry Island Indians.

There are two entrances to Depot Harbour, one on each side of **Depot 20 Island**, 60 feet (18^m3) high, which shelters the middle portion of the harbour. The western and main entrance, between the island and Cadotte Point, is a quarter of a mile wide and has not less than 6 fathoms (11^m0) of water in it.

Depot Harbour is a terminus of the Canadian National Railway. The houses being in a hollow are not conspicuous from seaward, where the most 25 prominent objects are the Roman Catholic church and elevator.

At the berth in front of the elevator, 820 feet (249^m9) long, is a depth of 24 $\frac{1}{2}$ feet (7^m4). In continuation of this wharf is an extension 525 feet (160^m0) long with a berth 400 feet (121^m9) in length on the southern side; in this berth is a depth of 21 to 36 feet. (6^m4 to 11^m0). The Government wharf at the eastern 30 end of the harbour is 300 feet (91^m4) long and 150 feet (45^m7) wide. Berths, 70 feet (21^m3) wide, have been dredged the length of the wharf to a depth of 22 feet (6^m7). The depth at the wharves on the south side of the harbour is 24 feet (7^m3). In low stages there would be 3 $\frac{1}{2}$ feet (1^m0) less.

Skiff Rock, with 4 feet (1^m2) of water on it, lies a third of a mile northward 35 from Supply Point, the eastern entrance point of the harbour, and should be left to eastward.

An inner harbour, known as Depot Bay, exists southwestward of Cadotte Point, and to enter it, with 24 feet (7^m3) of water, keep between the latter and the larger of the two islands separating the inner and main harbours, and anchor 40 off **Hang-cliff Point** in 6 fathoms (11^m0).

Coast.—From Supply Point the shore of the sound takes an abrupt turn northward for a little over 2 miles to **Threemile Point**, the northern extremity of Parry Island, distant nearly 4 miles eastward from Killbear Point. It derives its name from being about 3 miles from the town of Parry Sound. A rock, 45 with 13 feet (4^m0) of water on it, is reported to lie about 200 feet (61^m0) from the light; the point, therefore, should not be hugged too closely. Otherwise the point has deep water close to it, and between it and **Gull Island** is a deep hole about a mile in diameter with as much as 61 fathoms (111^m6).

Chart 2284.

Light.—A *flashing white* light is exhibited, at an elevation of 38 feet (11^m6), from a grey cylinder surmounted by a red lantern on Threemile Point.

Twomile Point, being one mile eastward from Threemile Point and about 5 two miles from town, has the same bold character as the last mentioned, excepting on the east side where a rock, with 10 feet (3^m0) of water on it, lies a quarter of a mile southeast from the point.

Shoal Point is the next point southeast of Twomile Point, and has shoal water extending from it northeastward 300 yards (274^m3) which should be 10 guarded against in proceeding to the harbour.

Indian Creek is a long indentation between the last mentioned and Twomile Point. Small craft can proceed through this creek into a lake lying between Depot Harbour and the Indian village.

Belle Bay is an indentation immediately southward of Shoal Point in which 15 will be found good water close to the shore.

Deepwater Point is the west entrance point of Parry Sound Harbour, and has good water close to it, as much as 24 feet (7^m3) being found between the point and the flat from Bobs Point; the land immediately behind Deepwater Point rises to a height of 102 feet (31^m1).

20 **Light.**—A *flashing red* light is exhibited at an elevation of 26 feet (7^m9), from a pole with a white daymark on the northeast extremity of Deepwater Point.

Bobs Point is the east entrance point of Parry Sound Harbour and a flat extends 120 yards (109^m7) from it in the direction of the southern part of Deep- 25 water Point.

Channel—Buoys.—The channel between Deepwater and Bobs Points, leading to the harbour, is reported to have a depth of 23 feet (7^m0), over a width of 180 feet (54^m9); it is marked by spar buoys.

30 **Leading Lights.**—Two *fixed green* leading lights are exhibited on the south-east shore of Parry Sound Harbour. The front light is exhibited at an elevation of 35 feet (10^m7) from a white mast with white, diamond-shaped daymark; the rear light is exhibited at an elevation of 70 feet (21^m3), from a similar structure, 151°, 304 feet (92^m7) from the front light. These lights lead through the channel off Bobs Point.

35 **Silbow Rock**, 5 feet (1^m5) high, lies close to the main shore, and a little over half a mile northwest of Bobs Point.

McKerrel Rock (Lat. 45° 21' N., Long. 80° 03' W.), with 13½ feet (4^m1) of water on it, lies a little more than a quarter of a mile westward from Silbow Rock, and a heavy draught vessel should not pass between them.

40 **Light-buoy.**—This rock is marked by a black light-buoy, showing a *flashing white* light.

Chart 2284.

Parry Sound Town and Harbour.—The town, with a population of 5,183 in 1951, has railway communication by means of the Canadian Pacific and Canadian National Railways. It possesses a lumber mill erected northwest of Starkeys Point, the lumber piles of which can be picked up immediately a vessel clears Threemile Point when approaching the harbour. 5

The two large steel cylindrical tanks of the Imperial Oil Company, Limited are conspicuously visible, as soon as a vessel clears Bobs Point, when entering the immediate harbour.

The establishment of the Marine Agency of the Department of Transport is located here. There is daily steamer service with Midland and intermediate points. The Belvedere Hotel, the Marine Agency buildings, the Standard Chemical works and smelter are the most conspicuous buildings seen, when approaching the harbour. 10

The depth in the channel close to Deepwater Point is 4 fathoms (7^m3). The harbour may be said to be comprised between the entrance points and the Indian village, 1¼ miles southwestward, making an area of about 370 acres. The shores have deep water close to them, and are in every way suitable for wharfage. 15

The northern portion of the harbour at the mouth of **Seguin River** is shoaler than any other part, caused by sawdust and sand. The bridge of the Canadian Pacific Railway crosses the river about 300 yards (274^m3) from its mouth. 20

Wharves.—The Marine Agency wharf, 305 feet (93^m0) long, is situated outside the harbour over a third of a mile northward of Bobs Point. In a berth, 110 feet (33^m5) long, the reported depth is 19 feet (5^m8). 25

From the northwest entrance point of Seguin River, a wharf extends 902 feet (274^m9) in a southwesterly direction. In a basin on the west side of the wharf 473 feet (144^m2) long and 150 feet (45^m7) wide, there is a depth of 10 feet (3^m0). The berth on the east side extending the whole length of the wharf is reported to have a depth of 20 feet (6^m1). There is a shelter on the wharf and electric light. 30

Other wharves are the Imperial Oil Company, Limited, wharf on the eastern side of the harbour, distant 300 yards (274^m3) from the Town wharf. It is 200 feet (61^m0) long, 14 feet (4^m3) wide and has a depth of 22 feet (6^m7) alongside. 35

The old smelter wharf is one mile northward of Bobs Point, but is in a state of disrepair.

The Parry Sound Distributors oil wharf is located on the east side of the mouth of the Seguin River; it is 80 feet (24^m4) long and in the berth alongside and channel of approach is a depth of 14½ feet (4^m4) feet. The east side of the channel of approach is marked by two red spar buoys. 40

Marine railway.—Fifty feet (15^m2) south of the wharf is a privately owned marine railway extending approximately 30 feet (9^m1) into the channel and resting on the bottom. Mariners should take care to avoid it, when approaching or leaving the wharf. 45

Ice forms about December 15 and breaks up about April 15.

Pilots, if required, board vessels at Red Rock lighthouse.

A rock with 10 feet (3^m0) of water on it, lies southeast of Bobs Point and 200 yards (182^m9) from the eastern shore of the harbour.

Light-buoy.—A red boat-type buoy showing a *flashing red* light, marks this rock. 50

Chart 2284.

Oak Island is small and lies 150 yards (137^m2) south of the southern part of Deep-water Point. It is clean all around.

Rosetta Island, 48 feet (14^m6) high, lies 200 yards (182^m9) from Parry Island and half a mile southwest of the harbour entrance and has deep water close to its eastern side. A rock, with 13 feet (4^m0) of water over it, lies 300 yards (274^m3) westward from the south point of Rosetta Island.

Indian village.—This settlement is situated near the shore of the deep indentation between Rosetta Island and **Salt Point**.

10 A rock, with less than 6 feet (1^m8) of water on it, lies 250 yards (228^m6) eastward from the northeast extremity of Salt Point.

Sloop Island (*Lat.* 45° 19' N., *Long.* 80° 03' W.), small and 7 feet (2^m1) high with trees on it, is situated at the south corner of the harbour, and is distant one mile from the town of Parry Sound. Shoal water extends 100 yards (91^m4) from its north and northeast sides, and a channel with 12 feet (3^m7) of water separates it from **Jenkins Point**, from which it is distant about 70 yards (64^m0). The shallow draught steamers using South Channel usually take this narrow passage.

Beacons.—A black and white day beacon, with reflector band, stands on the eastern side of Sloop Island. A red and white day beacon, also with reflector band, is erected on Jenkins Point.

Buffalo Island is situated a little more than a third of a mile south of Sloop Island close northward from Rose Point.

Thompson wharf is situated off the large hotel on the southwest side of the point just northeast of Buffalo Island. Steamers going south are not to leave this wharf until the bridge is open.

Rose Point swing bridge.—Rose Point is the long, narrow point about 150 yards (137^m2) south of Buffalo Island, and it is here that the Canadian National Railways swing bridge is erected by which Parry Island and Depot Harbour are reached. The swing pier is placed 275 feet (83^m8) from Rose Point and 450 feet (137^m2) from Parry Island. On each side of the centre pier is an opening 60 feet (18^m3) wide.

A good wharf also has been built on the north side of Rose Point for the convenience of passengers transferring from the railway to the ferry for Parry Sound. A depth of 11 feet (3^m4) of water will be found at this wharf at low stages.

Bridge signals.—Masters of vessels wishing to pass the bridge should stop at Sloop Island from the north, or off the northeast point of **Isabella Island** if from the south, and signal *three prolonged whistles*. A mast placed upon the centre of the swing bridge exhibits from its top, at a height of 70 feet (21^m3) a red and white ball, when the channel is clear. When the ball is down on the bridge, navigation is closed. On no account should a vessel approach the bridge nearer than above-mentioned, until the signal is made that the channel is clear.

Lights.—At night, a green light is shown up and down the channel from the centre pier when the openings are clear. A red light shown from the same denotes navigation is closed.

Directions.—**Seguin Bank light-buoy** to **Depot Harbour** and **Parry Sound Harbour.**—The course and distance from a position half a mile eastward of Bears Rump Shoal light-and-bell-buoy to three-quarters of a mile southward

Chart 2284.

of Seguin Bank light-and-bell-buoy is 089° , 50 (44 nautical) miles. From North Channel of Lake Huron, the course from Gull Island is 137° and distance 52 (45 nautical) miles. From Owen Sound, the course from abreast Squaw Point to Red Rock lighthouse is 026° and distance $55\frac{1}{2}$ ($48\frac{1}{4}$ nautical) miles to the line of Snug Harbour range. 5

When nearing Seguin Bank light-buoy (*Lat. $45^{\circ} 19' N.$, Long. $80^{\circ} 32' W.$*), pass south of it, and edge a little northward to bring the Snug Harbour light-houses or lights in line, bearing 070° . The distance between Seguin Bank and Three-star Shoal light-buoys is $7\frac{3}{4}$ ($6\frac{3}{4}$ nautical) miles. If the weather is too thick to discern these range lighthouses, but clear enough to see Red Rock lighthouse, the latter should be kept between the bearings of 065° and 360° , until the weather clears up, to avoid Richmond Rock on the north side of the track, and Clarke Rock and Knight Shoal on the south side. 10

The Snug Harbour range should be kept until a quarter of a mile northeast of Three-star Shoal light-buoy, when a vessel should be ready to turn gradually to the southeast and steer for Jones Island leading lights in line, bearing 132° . 15

This range should be kept for a distance of $1\frac{1}{2}$ miles until one-half mile northwestward of Middle Ground light-buoy (*see* page 198). Alter course to pass about 100 yards (91^m4) southwestward of this buoy. From this position, steer 116° for $1\frac{1}{2}$ miles, passing 300 yards (274^m3) northeastward of Hooper Island light-buoy. When this buoy bears 270° , alter course and steer 089° for Spruce Island shoal light-buoy. 20

Caution.—The channel here is very narrow and a vessel at night should proceed slowly. 25

When east of Spruce Island light-buoy, haul northward and steer 070° for the south side of Davy Island (*see* page 202), or with Carling Rock light-buoy a little on the starboard bow and passing fairly close northwestward of it

If proceeding to Parry Sound Harbour, the course, from Killbear Point to Threemile Point light, is 074° and distance 4 miles. After passing Two mile Point, bring Bobs Point just open north of Deepwater Point light, bearing about 115° , to pass between McKerrel Rock and the spit from Shoal Point. The leading lights on the southeast shore of the harbour, bearing 151° , lead through the dredged channel between Bobs and Deepwater Points. 30

Depot Harbour to Seguin Bank light-buoy.—There are no dangers eastward of Sister Islands, after passing northward of which keep Killbear Point just open north of the north Sister Island, bearing 093° . Pass north of Carling Rock light-buoy, and steer about 250° , and south of Spruce Island Shoal light-buoy. 35

Now steer 269° for Hooper Island light-buoy ahead. When the southeast point of Pancake Island bears about 036° , haul northward, steering 296° and passing 300 yards (274^m3) northeastward of Hooper Island light-buoy. When about 100 yards (91^m4) southeastward of Middle Ground light-buoy, alter course gradually northward to round this shoal and bring the Jones Island leading lights in line astern, the course being 312° . After passing Black Rock, a sharp lookout must be kept for the Snug Harbour leading lights so as to bring them in line astern, bearing 070° , as soon as possible. 40 45

If the Jones Island range were kept too long, a vessel would be in danger of striking Vankoughnet Ground.

The Snug Harbour range should now be kept as far as Seguin Bank light-buoy if bound northwest, or west; if southwestward or southward, a vessel by day may leave the range when Red Rock lighthouse bears 043° . 50

Chart 2284.

Caution.—The soundings in the approach to Parry Sound are too irregular to be much guide in thick weather, and great caution is consequently necessary under such circumstances.

5 **Patterson Island**, 27 feet (8^m2) high and wooded, lies 300 yards (274^m2) off the northeast coast of Killbear Promontory one mile north of the northeast extremity of Killbear Point. It is connected to the coast by dry rocks and shallow water, but its eastern side is steep-to.

10 **Ouimet Point**, the southwest entrance point of Blind Bay, is situated one mile northwest of Patterson Island and is steep-to, as is the bight between them.

Blind Bay is the name given to the first indentation northeastward of Killbear Promontory, and from Ouimet Point to the head is $2\frac{1}{2}$ miles in length in a northwesterly direction. The shores are about 100 feet (30^m5) in height and wooded, and the whole bay forms an excellent harbour with no dangers, excepting a rock with 4 feet (1^m2) of water on it, 200 yards (182^m9) from the north-
15 east shore, and a half a mile from the head of the bay.

Collins Bay is the next inlet northeastward of and parallel to Blind Bay, its length from the entrance points being $1\frac{1}{2}$ miles. **Middle Island**, 15 feet (4^m6) high, is the only island in it and has a passage on each side of it, that on
20 the northeast side being the deeper and more direct of the two.

The head of Collins Bay is not closed, but connected by a narrow channel to a sheet of water called by the same name, but to which the survey did not extend.

Loon Bay is the third arm northeast from Killbear Promontory and runs
25 2 miles also parallel to Blind Bay. There are six islands in this bay, the larger one of the two just separated and dividing it from Collins Bay being known as **Johnson Island**, 50 feet (15^m2) high, **Hailstone** and **Loon Islands** lie nearly in the middle of the bay and good passages exist on both sides, that between Loon Island and **High Bluff** being limited in width to 150 yards (137^m2).
30 Anchorage may be had in 6 fathoms (11^m0) between Loon Island and the two thin-wooded islands near the head called **Giffen Islands**.

Smith Bay is the next long indentation northeastward of Loon Bay. There are patches of good land in this locality cultivated by farmers living there, and in **Dent Bay** the next indentation southwestward. Vessels can enter Smith
35 Bay by the passages on either side of **Goat Island**, but if passing southwestward of Goat Island take care to avoid a sandspit making off 50 yards (45^m7) from the northwestern part of the latter, by keeping nearer to the **Alves Point** shore.

Good anchorage can be had in 5 fathoms (9^m1) half a mile northwestward
40 from Goat Island, as indicated by the anchor on the chart. The narrow passage between Goat Island and **Grave Island**, immediately east of it, is fit only for small boats.

Blairs Landing, $1\frac{1}{4}$ miles northeast of Grave Island, contains good anchorage, in 5 fathoms (9^m1) off the gravel bank at the mouth of the stream. There
45 is a post office here, the official name of which is Carling, on the boundary of which township Blairs Landing is situated.

Before proceeding with the main coast between Blairs Landing and Parry Sound Harbour a description of the islands between Killbear Point and Blairs Landing will be given:—

Chart 2284.

Mowat Island has a decided summit 143 feet (43^m6) high, and the water is deep close to its south and east shore. **Muriel, Bar,** and other islands encircle its northern side, and give shelter to a snug little bay with anchorage in 4 fathoms (7^m3), indicated by the anchor on the chart. A narrow and shallow spit makes out 350 yards (320^m0) westward from its southwest point. 5

There is no passage for a ship between Muriel and Mowat Islands, and the channel between Mowat and Bar Islands has a depth of only 9 feet (2^m7), but the two passages eastward of Bar Island are good, that immediately eastward of Bar Island being the deeper. 10

Spectacle Island, about 100 feet (30^m5) high and wooded, consists of a large island joined to a small one by a narrow isthmus.

There is no passage between Spectacle Island and **Mahnumdaug Island**, 200 yards (182^m9) westward of it, but between the former and **Wigwas Island**, 300 yards (274^m3) northeastward, a depth of 15 feet (4^m6) can be carried, by keeping close to Wigwas Island. 15

Green Island (*Lat. $45^\circ 23' N.$, Long. $80^\circ 10' W.$*), is connected easterly to Long Island by a gravel bank on which there is not more than 9 feet (2^m7) of water. A deep water passage will be found between Green and Spectacle Islands on the north, and the Mowat Island Group on the South. 20

Horse Island, half a mile south of Grave Island, is a round black-looking island about 150 feet (45^m7) high. The passage between it and Green Island is contracted by a couple of dry rocks—one on either side—to a width of 300 yards (274^m3) and a depth of 8 fathoms (14^m6).

A large bare rock, 32 feet (9^m8) high, lies on the southern edge of a spit extending 350 yards (320^m0) easterly from the southeastern side of Horse Island, thus narrowing the channel between it and Huckleberry Island to a width of 250 yards (228^m6). 25

Passage Island, bare and 16 feet (4^m9) high, lies midway between Muriel and Horse Islands. It has rocky spurs extending 50 yards (45^m7) off its north and east points, but is otherwise steep-to with good passages on either side. 30

Huckleberry Island, including Wall Island, is $2\frac{3}{4}$ miles long north and south, with a greatest breadth of $1\frac{1}{3}$ miles. It is wooded and about 150 feet (45^m7) high, and with one exception the north and east sides are steep-to.

Hole in the Wall is a remarkable cleft separating Huckleberry Island and **Wall Island**, the latter situated south of Huckleberry Island and nearly $1\frac{1}{4}$ miles east of Mowat Island. The narrowest part is 111 feet (33^m8) wide and depth of water 13 feet (4^m0) (in low stages there may be $3\frac{1}{2}$ feet (1^m0) less). Vessels running through this picturesque channel should take care to avoid a rock, nearly awash, at the western entrance, by keeping Wall Island close on board. Rocks lie 300 yards (274^m3) off the south point and southwest side of Wall Island. 35 40

Buoys.—A red spar buoy is moored on the east side of a rock, with less than 5 feet (1^m5) over it, lying close east of **Pyette Point**, the northeastern point of Huckleberry Island. The limit of the shoal water making off from the south end of Wall Island is marked by a black spar buoy moored 800 feet (243^m8) south of the island. A black spar buoy is moored 30 feet (9^m1) west of the rock lying at the Western entrance of Hole in the Wall. 45

Chart 2284.

Tranch Rock, awash, lies a third of a mile eastward from the north extremity of Horse Island, and should be carefully avoided by a vessel using the channel between Horse and Huckleberry Islands.

5 **Buoy**.—A red spar buoy is moored close east of this rock.

Collins Reef is a shallow rocky bank extending a quarter of a mile from the northwest side of Huckleberry Island. This shoal together with **Dent Rock**, with less than 6 feet (1^m8) of water on it, almost blocks the passage between Huckleberry Island and the main shore, but with local knowledge, a
10 depth of 4 fathoms (7^m3) can be carried between them, and 3 fathoms (5^m5) between Dent Rock and the main shore.

Buoy.—A red spar buoy is moored close southeast of Dent Rock.

McIlray Island is the western and lower of two lying half a mile south-eastward of Blairs Landing. A rock, awash, lies 150 yards (137^m2) southwest
15 of McIlray Island, but leaving a passage with a depth of 5 fathoms (9^m1) between it and Huckleberry Island.

Elizabeth Island, about 70 feet (21^m3) high and thinly wooded, is separated from the eastern shore of the sound by a narrow channel, with a depth of 6 feet (1^m8) over mud. The bight between Blairs Landing and Elizabeth Island
20 is indented by several small circular beaches, and, although the bottom in this bight is uneven, nothing of a very shallow nature was discovered. Deep water approaches close to the south point of **Mary Island** lying just clear of the south end of Elizabeth Island.

Partridge Island, round and 37 feet (11^m3) high, is a conspicuous feature
25 standing well out in the passage between Elizabeth and Huckleberry Islands, with deep water all around it

A bank stretches off from Elizabeth Island toward Partridge Island, 300 yards (274^m3), from which there is a depth of 3 fathoms (5^m5); by keeping close to the latter island, however, a depth of 14 fathoms (25^m6) may be carried
30 through, between it and the west edge of the bank.

Gull Island, 17 feet (5^m2) high and quite bare, is a remarkable clean rock situated two-thirds of a mile southward of Partridge Island, and seven-eighths of a mile eastward from the eastern entrance of **Hole in the Wall**.

Bower's Bay is the name given to a large indentation eastward of Gull
35 Island, in the northern part of which are two well sheltered coves, the western one affording good anchorage in 5 fathoms (9^m1). The deepest channel into Bower's Bay is between **Galna Island** and **Duncan Point**, by which 7 fathoms (12^m8) can be carried by keeping close to the Duncan Point shore to avoid the bank extending 300 yards (274^m3) northeastward from Galna Island.

40 A rock, with 7 feet (2^m1) of water, over it, lies 150 yards (137^m2) off the south point of this island, and another with the same depth is situated a quarter of a mile northwest from Galna Island, or nearly mid-distance between it and Robertson Island.

A passage into Bower's Bay can also be had northward of **Robertson**
45 **Island**, with not less than 15 feet (4^m6) of water. (In low stages there may be $3\frac{1}{2}$ feet (1^m0) less.)

From Duncan Point, the shore trends southeastward with a slight outward curve a little more than $1\frac{1}{2}$ miles to the smelter and the pump-house for Parry Sound waterworks, and has good water fairly close to it.

Chart 2284.

Channels from Black Rock to Twin Sisters Island

Snug Harbour (*Lat. 45° 22' N., Long. 80° 19' W.*), is a perfectly sheltered anchorage $2\frac{1}{2}$ miles northward from Pancake Island, and flanks a portion of the inside passage between Burritts Point and Pancake Island. It is of importance on account of the situation of the rear light of the range which takes its name from the harbour. The harbour, with a depth of 4 feet (1^m2) is used by small craft. Small repairs can be undertaken and gasoline and oil are available. There is telephone service to Parry Sound. During the summer there is a daily postal service.

Wharf.—There is a Government wharf 190 feet (57^m9) in length, with an L-shaped head 51 feet (15^m5) in length, There is a depth of 6 feet (1^m8) at the outer end of the wharf. A fishing establishment and a private wharf lies adjacent to the Government wharf.

Leading lights.—Two *fixed white* leading lights are exhibited, known as the **Snug Harbour range**. The front light is exhibited, at an elevation of 39 feet (11^m9), from a lantern on a white daymark with a black, vertical stripe on the western Walton Island; the rear light is exhibited, at an elevation of 62 feet (18^m9), from the roof of a building painted black with a white, vertical stripe, on the north entrance point of Snug Harbour, 071° , 3,100 feet (944^m9) from the front light.

These lights in line lead through a portion of Main Channel.

Franklin Island, with its attendant archipelago on the northwest side, is a large island lying northeast of Red Rock light and separated from the mainland by Shebeshekong Bay.

Shebeshekong Bay is the name usually applied now to the whole of the passage separating Franklin Island from the main shore, though the name was originally given to the inlet running in $1\frac{3}{4}$ miles eastward of Corbman Point, the north extremity of Franklin Island. It was reported that as much as 18 feet (5^m5) of water could be carried through this passage, but the survey has resulted in showing that at the **Narrows**, as the middle portion is called, the depth is not sufficient for vessels drawing more than 6 feet (1^m8) of water.

During the progress of the survey in 1890-1891 when the water was $1\frac{1}{2}$ to 2 feet (0^m4 to 0^m6) higher than in 1895, the surveying steamer *Bayfield* drawing 10 feet (3^m0), managed to scrape through as an experiment, but the lane of deep water was found to be of not much greater breadth than that of the vessel.

With local knowledge, or by a series of leading beacons, as were temporarily erected for the passage of the *Bayfield*, which beacons have been repaired, and also with buoys now maintained, light draught steamers would find here a smooth water passage on their way from Parry Sound to Pointe au Baril, when they could not face the sea which rolls in between Snake Island and The Minks in a southwest gale.

In the head of Shebeshekong Bay a stream empties itself. The mouth of the stream is accessible to boats and probably to small vessels, but time did not permit the survey being extended to this unimportant locality.

Beacons.—A white beacon stands on a rocky reef near the southeastern side of Franklin Island, and a second white beacon is situated on **Hansley Island**, 022° , 2000 feet (609^m6) from the front beacon.

Chart 2284.

Burritts Point is the southeastern narrow extremity of Franklin Island. It is $2\frac{3}{4}$ miles southward from Corbman Point, and $2\frac{1}{4}$ miles northeastward from Black Rock. Franklin Camp, a summer resort, is situated on the point. **Ireland Point** lies 400 yards (365^m8) northeastward of Burritts Point.

Buoy.—A black spar buoy marks a one-foot (0^m3) shoal, 300 yards (274^m3) south of Ireland Point.

Directions.—Black Rock to Burritts Point.—From the westward of Black Rock by keeping the white beacons, mentioned above, in line bearing 022° , a passage with a depth of 21 feet (6^m4) may be found to Cracroft Rock. When the rock and Snug Harbour rear light are nearly in transit, alter course to 043° for about three-quarters of a mile; there is a depth of 11 feet (3^m4) in this channel; thence steer 015° for 700 yards (640^m1); thence 077° for 600 yards (548^m6); thence proceed northward passing westward of the black spar buoy moored westward of Ireland Point.

Burritts Point to Pancake Island.—In connection with the passage through Shebeshekong Bay it may be stated that an inside channel exists from the latter to **The Pancakes**, through which 9 feet (2^m7) can be carried.

Corbman Point is the northern extremity of Franklin Island. The land here is bare, and 18 feet (5^m5) high. From the northern Oak Island to Corbman Point a depth of 18 feet (5^m5) may be carried, the track passing close to the northern islands belonging to the Franklin Archipelago, but as no vessel should attempt even this portion of Shebeshekong Passage without local knowledge, there are no directions given in this publication. The channel is marked by beacons and buoys.

Light.—A *flashing red* light is exhibited at an elevation of 12 feet (3^m7), from a mast on a crib, on a shoal eastward of Corbman Point.

In **Dillon Cove**, the small uncharted indentation lying eastward of the first point eastward of **Tennant Point**, on the mainland ashore, is a Government wharf 126 feet (38^m4) in length with a depth of about 4 feet (1^m2) alongside.

The two northwestern islands, 26 feet (7^m9) high, of the Franklin Archipelago, above mentioned, are known as **Oak Islands** by reason of a number of trees of that character growing upon the southern island. The northern island has really few or no oaks upon it, but is a remarkable feature on account of its dark looking pines and high bare northwest point.

The western entrance to Shebeshekong Bay, or passage, is well pointed out by this island close to which the water is deep.

Mink Islands.—Together with McCoy Islands, Mink Islands or The Minks, form a chain 9 miles in length, lying westward of Franklin Island and of the mainland north of it. Through this chain, there is no passage fit for any but light draught craft, but between it and Franklin Island and the mainland is an area of water fairly deep strewn with numerous rocks and through which is a channel leading to Shawanaga Bay or Franklin Inlet.

This chain, together with the adjoining shallow water, makes an excellent breakwater to the part of the inside passage between Twin Sisters Island and Red Rock lighthouse, described on pages 213 and 214.

The Minks form the southern group of the chain, which group is $4\frac{1}{2}$ miles long and composed of numerous islands of which the following are the most important:

Chart 2284.

Mink Islands Fishery.—Near the southeast extremity of the whole string is situated the highest and largest island of the group, 30 feet (9^m1) high, on which is erected a small wharf, icehouse and huts in connection with the fishing business undertaken during the summer. The island and its attendant rocks afford good shelter in all winds for fishing boats, and the small wharf on the east side of the island can generally be approached for the purpose of loading the fish. 5

Anchorage.—There is an anchorage about 250 yards (228^m6) northwestward of the wharf, in 5 fathoms (9^m1) good holding ground, with just room to swing with 25 fathoms (45^m7) of chain, sheltered in northerly winds by the two groups of rocks, dry and sunken, known as **Harbour Rocks** and **Dixon Bank**. 10

A stranger of heavy draught, if seeking shelter under The Minks, should anchor in 11 fathoms (20^m1), muddy bottom, with the icehouse bearing about 246°, distant 1 $\frac{1}{4}$ miles. If the weather be clear, from this position the south side of Bateau Island should be touching the north side of Little Snake Island—the leading mark for this part of the inside channel. 15

From the fishery establishment, a string of rocks, dry and sunken, extends nearly 1 $\frac{1}{4}$ miles southeastward, and deep water approaches close to the northeast side of this chain, thus facilitating the approach to the wharf at the fishery.

Old Tower Island (*Lat. 45° 22' N., Long. 80° 25' W.*), 16 feet (4^m9) high, is the southern one of the whole chain, and was the site of a former lighthouse. 20

Farr Rock, with 10 feet (3^m0) of water on it, is situated nearly three-quarters of a mile northeast from Red Rock lighthouse; there is a depth of 5 fathoms (9^m1) between Farr Rock and **Freeman Rock**, the latter with 16 feet (4^m9) of water over it, lying northerly and distant one-quarter of a mile from Farr Rock. A spot, with 13 feet (4^m0) on it, lies southeast 250 yards (228^m6) from Farr Rock. 25

Cook Reef, with 15 feet (4^m6) of water on it, lies 1 $\frac{1}{4}$ miles northeastward from Red Rock lighthouse.

Bailey Rock, with 6 feet (1^m8) of water over it, is the most dangerous obstruction to be met with eastward of the track between Twin Sisters Island and Black Rock, on account of its shallowness and being only a quarter of a mile eastward of the ship's track. It bears 070°, 2 miles from Red Rock lighthouse, and 293°, 1 $\frac{3}{4}$ miles from Black Rock. 30

Buoy.—A black spar buoy is moored on the western side of Bailey Rock. 35

Young Rock, with 4 feet (1^m2) of water on it, lies 1 $\frac{7}{8}$ miles northeastward from Red Rock lighthouse and five-eighths of a mile northwestward from Bailey Rock. A 12-foot (3^m7) spot lies 200 yards (182^m9) south and an 18-foot (5^m5) spot, 250 yards (228^m6) northwest of same rock.

Clearing mark.—The southwest side of Bateau Island in line with the northeast point of Little Snake Island, bearing 141°, leads a third of a mile southwestward of these dangers. 40

Hudgen Rock, with 14 feet (4^m3) of water on it, lies one mile northeastward from the icehouse at The Minks, and a quarter of a mile southwestward of the vessel's track. 45

Boucher Island, long, narrow, wooded and 18 feet (5^m5) high, is situated nearly midway between Green Island and the fishery establishment. A steep bare rock, 27 feet (8^m2) high, lies a quarter of a mile southwestward from the southeast end of Boucher Island.

Chart 2284.

Green Island, is a small, round, heavily wooded island, 13 feet (4^m0) high, situated in the middle of the Mink Islands.

Edwards Bank, with 6 feet (1^m8) of water on it, is situated nearly midway
5 between Twin Sisters Island and the fishery establishment on Mink Islands. It is distant nearly three-quarters of a mile westward of the line joining the southeast extremity of Twin Sisters Island and Red Rock lighthouse—the vessel's track. Two patches, with 15 and 17 feet (4^m6 and 5^m2) on them, lie eastward of Edwards Bank, and consequently nearer the track, but are of little importance as no vessel
10 drawing the latter depth of water should attempt the inside channel to Pointe au Baril.

Milo Rock, with 10 feet (3^m0) of water on it, lies southward three-quarters of a mile from the southeast point of Twin Sisters Island. As this danger lies only 300 yards (274^m3) eastward of the course, care should be taken to keep in an
15 exact line between the southeast point of Twin Sisters Island and Red Rock lighthouse. After passing southward of Milo Rock, the western entrance of Shebeshekong Bay and the northwest Oak Island (forming the south entrance point to the same) will be seen, and no other dangers have been discovered very near the vessel's track, until east of the fishery icehouse.

Catherine Rock, with 6 feet (1^m8) of water on it, is situated nearly three-quarters of a mile southwest from the southeast extremity of Twin Sisters Island.

Keegan Rock, 3 feet (0^m9) high, lies a little over a third of a mile eastward from the same.

Newburn Rock, 12 feet (3^m7) high, lies half a mile northeastward from the
25 southeast point of Twin Sisters Island.

These two last rocks are connected by a shallow bank, and should be passed to the westward. The channel being between them and Twin Sisters Island.

Twin Sisters Islands lies in the south entrance of Shawanaga Inlet; it is almost divided into two parts, each portion attaining a height of 25 feet (7^m6).
30 The ship channel is on the east side of the island, where there is a red beacon erected on the southeast point. A spit makes off from the southeast extremity of the island 50 yards (45^m7) but the northeast side of Twin Sisters Islands is clean.

Pease Rock, mentioned on page 000, is really the termination of the shallow
35 water extending a third of a mile in a northwest direction from the northwest extremity of Twin Sisters Islands.

Elm-tree Island, 16 feet (4^m9) high, with a conspicuous elm tree on it, is a large island situated near the northwest end of the Mink Islands.

A group of small islands lies a quarter of a mile northwestward from Elm-tree
40 Island, and from these islets a very shallow bank extends in the same direction nearly half a mile.

The islands and dangers west of Mink Islands will now be described.

Solomon Rock, with 10 feet (3^m0) of water on it, lies a third of a mile westward of Elm-tree Island, and a patch with 18 feet (5^m5) on it, lies a third of a mile
45 further in the same direction.

Chart 2284.

Chief Rock, with 9 feet (2^m7) of water on it, lies more than one-third of a mile southward of the same island, and between Chief and Solomon Rocks are to be found two other patches, with 9 and 11 feet (2^m7 and 3^m4) of water on them, the smaller of the two called **James Rock** being the nearer to Chief Rock. 5

Isaiah Rock, with 7 feet (2^m1) of water on it, lies three-quarters of a mile westward from Green Island, being one of the outermost shoal spots on the west side of The Minks.

North Limestone Island, 12 feet (3^m7) high, is flat with a few scattered bushes on it, and an isolated umbrella-shaped tree near its northeast extremity. 10 This island is rather over half a mile long, with an average breadth of 200 yards (182^m9) and lies 3 miles westward from the northwest end of Elm-tree Island. A bank, under 10 fathoms (18^m3), joins North Limestone Island to the southern portion of McCoy Islands.

Midland Bank extends from the northeast extremity of North Limestone 15 Island two-thirds of a mile, where there is a depth of 12 feet (3^m7) over rock.

City Rock (*Lat. $45^\circ 25' N.$, Long. $80^\circ 32' W.$*), with 4 feet (1^m2) of water over it, is a small reef lying half a mile eastward from the northeast extreme of the same island.

Chesapeake Rock, with 4 feet (1^m2) of water on it, lies one-third of a mile 20 southwest of the southwest point of North Limestone Island.

West Reef extends a third of a mile westward from the western point on the same island, with a depth of 9 feet (2^m7) on it; shallow water extends 300 yards (274^m3) from the northwest side, 200 yards (182^m9) from the southeast side and 300 yards (274^m3) south of North Limestone Island. 25

Stalker Bank, with 17 feet (5^m2) of water on it, is situated 302° , distant 3 miles from the southwest extremity of North Limestone Island, and should be avoided by a heavy draught vessel in a heavy sea. The light colour of the limestone bottom, seen through the generally clear water in this locality gives it the effect of being much shoaler than it is. 30

Long Bank is worthy of mention as being useful in thick weather as a warning of the vicinity of The Limestones. This rock bank, under the depth of 10 fathoms (18^m3), is 4 miles long in a northerly and southerly direction, with an average breadth of $1\frac{1}{4}$ miles, and is separated from the shoal water about The Limestones by a lane of water, 14 to 16 fathoms (25^m6 to 29^m3) in depth over a sandy and clay bottom. 35

The shoalest water on Long Bank is 6 fathoms (11^m0) over rock near the north extremity. A depth of 13 fathoms (23^m8) exists between Long Bank and the 10-fathom (18^m3) line round Stalker Bank. Another bank, with 8 fathoms (14^m6) of water on it, lies two-thirds of a mile westward of the northern part of Long Bank. 40

In thick weather, a vessel from the west getting a cast of 10 fathoms (18^m3) or less will be in the vicinity of The Limestones, and should not proceed further until the latter are discernible.

South Limestone.—This is the name given to three islands lying close 45 together north and south, the centre one being the highest viz. 12 feet (3^m7). This centre island, although of the same height as the North Limestone Island,

Chart 2284.

appears higher on account of the thicker character of the bush. It is distant $1\frac{5}{8}$ miles from North Limestone Island, and there is a passage between them of half a mile in width, with a depth of 5 to 7 fathoms, (9^m1 to 12^m8) mixed bottom.

- 5 **Wallis Rocks**, of granite formation, consist of a cluster of bare rocks half a mile in greatest length, the middle one of which has a sharpish mound on it 10 feet (3^m0) high. These rocks are separated from South Limestone Island by a channel the navigable breadth of which, between the shallow water on either side, is a quarter of a mile in the narrowest place, the depth being 8 fathoms (14^m6).
- 10 The deep water comes close in to the eastern side of Wallis Rocks and South Limestone Islands, but the other sides of the latter are foul for a considerable distance, as little as 12 feet (3^m7) being found half a mile southward.

- Shannon Rock**, 2 feet (0^m6) high and small, lies nearly a third of a mile northward from the northeast point of South Limestone Island; it has deep water
- 15 around it, and a depth of 4 fathoms (7^m3) between it and the bank extending a quarter of a mile from the north extremity of South Limestone Island.

Provo Shoal, with 15 feet (4^m6) over it, lies one mile northeastward from the east point of South Limestone Island; it is a small patch with deeper water close around it.

- 20 **South Limestone Bank** is a large area of depths under 10 fathoms (18^m3), extending in a general southwesterly direction $2\frac{1}{2}$ miles from the island of that name. The shoalest spot, with 18 feet (5^m5) over rock, lies nearly $2\frac{1}{4}$ miles southwestward from the highest part of South Limestone Island. The 10-fathom (18^m3) line of this bank is separated from that of Long Bank by a lane two-
- 25 thirds of a mile wide, and depth of 16 fathoms (29^m3) over sand and clay.

Lawrence Bank, with $4\frac{1}{2}$ fathoms (8^m2) least water, lies $1\frac{1}{8}$ miles southward from South Limestone Island.

- Hankinson Bank**, with 5 fathoms (9^m1) least water, is another rocky elevation of the bottom situated half a mile southeastward from South Limestone
- 30 Bank and 2 miles southward from the southern South Limestone Islands. The 10-fathom (18^m3) bank, on which it lies, extends in a northeast and southwest direction for $1\frac{1}{2}$ miles with an average breadth of over one-third of a mile.

CHAPTER VIII

MCCOY ISLANDS TO GRONDINE POINT

Datum.—See page 1.

[For description of the shore and islands southward of Twin Sisters and McCoy Islands, see Chapter VII.]

5

Chart 2285.

Inside Channel from Twin Sisters Islands to Pointe au Baril:—

Twin Sisters Islands to Turning Island.—The principal features and dangers on both sides of the passage will first be described:—

Jack Reef is a dangerous obstruction with 5 feet (1^m5) of water over it, lying a little over one-third of a mile northeastward from the northwest extremity of Twin Sisters Islands. (For description of Twin Sisters Islands see page 214). 10

Buoy.—A black spar buoy is moored westward of Jack Reef.

Pease Rock, with 9 feet (2^m7) of water on it, lies nearly mid-distance between Callady Rock and the northwest end of Twin Sisters Islands to which it is joined by shallow water. 15

Callady Rock, 2 feet (0^m6) high, is situated three quarters of a mile northwestward from the northwest extreme of Twin Sisters Islands.

Anchorage, in 4 fathoms (7^m3) over mud, may be had 300 to 400 yards (274^m3 to 365^m7) southward of Callady Rock, and, excepting a little sea from the southward, perfect shelter had with all winds. This will be found a very useful anchorage when overtaken by darkness in the navigation of these inner waters. 20

McCormick Island (Lat. 45° 28' N., Long. 80° 26' W.), 12 feet (3^m7) high, lies a quarter of a mile northward of Callady Rock, to which it is connected by shallow water. In leaving the above mentioned anchorage for the north, this island should receive a berth of 300 yards (274^m3). 25

McIntyre Shoal with 13 feet (4^m0) least water over it, lies over half a mile eastward of McCormick Island and in the track of vessels.

Kerr Rock, with 12 feet (3^m7) of water over it, lies 1½ miles northeastward from northeast extreme end of McCormick Island. 30

Orlebar Rock lies in the middle of the channel, 1½ miles northeastward from same end of McCormick Island. It has 15 feet (4^m6) of water over it.

Anchor Island is so named from being situated a quarter of a mile southward of the anchorage, in over 4 fathoms (7^m3) mud, near the eastern mouth of Frederic Inlet. Being about 30 feet (9^m1) high, bare and level, it is easily recognized. It is 1½ miles northward of McCormick Island. 35

Chart 2285.

Green Islands, the next conspicuous feature on the east shore, is partly wooded, 16 feet (4^m9) high, and stands prominently out from the south. It lies $2\frac{1}{2}$ miles northward of Twin Sisters Islands and is separated from Green Point by
5 a shallow boat channel.

Dry rocks extend one-quarter of a mile southwesterly from the island, and to the edge of the 3-fathom (5^m5) line.

Green Island Bank extends in a general northerly direction nearly half a mile, in which position there is 7 feet (2^m1) of water. To clear the whole of this
10 bank, keep Turning Island just its breadth open east of Grave Island, bearing 004° . The coast between Bald Rock and Green Island is indented by several sandy coves. The shore from Green Point trends in a general southerly direction with a series of bays, to the north entrance of Shebeshekong Bay. It is wooded, 30 to 50 feet (9^m1 to 15^m2) high, with bare patches near the water.

Josephine Rocks are a cluster, 5 feet (1^m5) high, lying two-thirds of a mile northward of Anchor Island, and southeast from these, rocks, with less than 6 feet (1^m8) of water over them, extend 300 yards (274^m3), which should be carefully avoided.

Jane Rock, with 4 feet (1^m2) of water over it, lies with Turning Island just
20 shut in westward of the southeast point of Grave Island, distant nearly $1\frac{1}{4}$ miles northeasterly from Anchor Island. Another spot, with 6 feet (1^m8) on it, lies 120 yards (109^m7) northward.

MacGregor Rock, with 11 feet (3^m4) on it, is a small lump lying 300 yards (274^m3) southward from the southeast extremity of Grave Island and one-quarter of a mile northeasterly from Jane Rock. The east extremity of Mackey
25 Island touching the west side of Turning Island, bearing 003° , leads just clear of this rock.

Grave Island is a prominent feature standing near the ship's track and having an elevation of 22 feet (6^m7). It lies 4 miles north of Twin Sisters Islands
30 and is connected to the west shore of Shawanaga Inlet by a chain of dry rocks.

Beacon.—A red pyramidal beacon, with white square topmark, is erected upon the southeast point of the island, from which a reef extends 50 yards (45^m7); the island is otherwise steep-to.

Bald Rock, 13 feet (4^m0) high, lies one mile northeastward of Green Island.

Mary Rock is a 3-fathom (5^m5) spot lying one-quarter of a mile southeast
35 of Jane Rock.

Young Island, 7 feet (2^m1) high, is situated half a mile northward from Bald Rock; shoal water connects it to the rocks on the east shore, but between it and Grave Island the water is deep except for an 18-foot (5^m5) spot lying one-
40 quarter of a mile eastward from Grave Island.

Lloyd Island, in two parts, quite bare and 9 feet (2^m7) high, lies 300 yards (274^m3) northeastward of Grave Island, the ship channel passing between them.

Beacon.—A white pyramidal beacon, with triangle as topmark, is placed on the summit of Lloyd Island.

Nadeau Island, 48 feet (14^m6) high, is situated three-quarters of a mile northward from Grave Island and has lying close to its northeast side a wooded islet and cluster of islets and dry rocks, off which, a bank, with 10 to 15 feet

Chart 2285.

(3^m0 to 4^m6) of water over it, makes out to within 150 yards (137^m2) of Turning Island. The channel is between this bank and Turning Island with a depth of 4 fathoms (7^m3).

This island marks the junction of Middle Reach with **Shawanaga Inlet**. 5
Midway between Nadeau and Grave Islands is a small partially-wooded island about 20 feet (6^m1) high, called **Chowne Island** off which the water is deep.

Mosley Island, 8 feet (2^m4) high and bare, marks the southern point of a deep indentation, in the southeast corner of which is a small wharf and store belonging to the **Shawanaga Indian Reserve** situated further inland. 10

A mile north of Mosley Island and on the shore of Shawanaga Inlet is **Skerryvore** summer hotel and resort.

Turning Island (*Lat. 45° 32' N., Long. 80° 25' W.*), marks the turning point from Middle Reach into the main body of Shawanaga Inlet. The island is small, has a few bushes on it, and being 17 feet (5^m2) high presents a good 15
object to steer for. A shallow rock lies 50 yards (45^m7) off its southwest extremity, and two rocks, 3 feet (0^m9) high, lie 300 yards (274^m3) northeast of Turning Island; also a rock, with 9 feet (2^m7) over it, lies a third of a mile northeast from the same.

Beacon.—A white pyramidal beacon with triangular topmark is erected 20
on the southwest point of Turning Island.

O'Connor Rocks, a mile northward of Mosely Island, mark the north extremity of this inlet. A line drawn from O'Connor Rocks to Mackey Island marks the northern limit of the survey of Shawanaga Inlet, although it is reported that vessels can proceed much further north. 25

High Pine Island is situated half a mile northwestward from Turning Island; two bare islets lie 200 yards (182^m9) southeast of High Pine Island.

Mackey Island lies two thirds of a mile northward from Turning Island and is at the junction of the upper portion of Shawanaga Inlet with Middle Reach. Its southern extremity is just separated from an islet 11 feet (3^m4) 30
high, 50 yards (45^m7) west of which is a shallow sunken rock.

Pollard Island, rather over half a mile in length, and situated one mile north of Nadeau Island, has a small wooded islet 10 feet (3^m0) high and a cluster of dry rocks about it lying close to its southwest extremity, and close to which the water is deep. 35

Stairs Island, partially burnt and about 20 feet (6^m1) high, lies one-third of a mile northwestward of High Pine Island, and, in the bight between the two a vessel will find good anchorage, in 6 fathoms (11^m0) over mud.

Rigg Rock, with 9 feet (2^m7) over it, lies northwestward one-third of a mile from the northeast extremity of Stairs Island. 40

Carey Rocks, 5 feet (1^m5) high, are situated three-quarters of a mile northwestward of Stairs Island, and 100 yards (91^m4) west of an islet 7 feet high, with bushes on it. Shoal water makes off 200 yards (182^m9) northeast and northwest from Carey Rocks.

Pym Rock, about 40 feet (12^m2) square and 3 feet (0^m9) high, lies 200 yards 45
(182^m9) off the north shore and a little more than five-eighths of a mile westward from Pollard Island; it has fairly good water all around it.

Chart 2285.

Beacon.—A white pyramidal beacon with triangular topmark is erected on Pym Rock.

Duke Rock, 7 feet (2^m1) high, with a boat passage between it and the north shore, is small and round and is situated nearly $1\frac{1}{4}$ miles west of Pollard Island.

Ripple Rock, with 6 feet (1^m8) of water over it, is situated nearly 300 yards (274^m3) northeast from Sultan Rock, and is a very awkward obstruction, necessitating keeping close to Duke Rock. Sedgewick Point, Passage, and Abbot Islands in line lead north of it. There is no passage southward of Ripple Rock on account of another rock with 3 feet (0^m9) over it.

Buoy.—On the south side of the passage immediately north of Ripple Rock a red spar buoy is placed.

Sultan Rock, 2 feet (0^m6) high, is the name given to a small, bare, rock 270 yards (246^m8) southward of the coast of the north shore near Duke Rock.

A rock, with 11 feet (3^m4) of water on it, lies 100 yards (91^m4) northward of Sultan Rock, narrowing the ship channel to 150 yards (137^m2) in which, however, there is a depth of 6 fathoms (11^m0).

Passage Island, 10 feet (3^m0) high, small and in two parts, lies near the junction of Pointe au Baril and Middle Reaches. Vessels can pass northeastward of this little island, and between it and **Sedgewick Point**, taking care to pass exactly through the middle of the channel to avoid a shoal rock on either side. The channel is very narrow, but has a depth of 17 feet (5^m2), and the sunken rock on either side can be seen from the deck.

Beacon.—A white pyramidal beacon, with triangular topmark, is erected on Sedgewick Point, which is foul.

A wider and deeper channel than the above exists eastward of Abbot Island, and passes a quarter of a mile farther southwestward care being taken to avoid the rocky spit extending 100 yards (91^m4) from the southwest point of the island, situated between Abbot and Passage Islands.

Beacons.—A red beacon, with a white square as topmark, stands upon the east point of **Abbott Island**, and a similar one known as **Haggart Narrows** beacon is erected on the southwest side of the passage, on a rock a little northwest of Abbott Island.

Sing Narrows.—A ledge, with 8 feet (2^m4) of water on it, extends a third of the distance across the channel (known as Sing Narrows) from the eastern **Lauder Island**. To pass northeast of this rock, keep nearer the northeast shore and Sing Narrows white beacons in line ahead, bearing about 112° . At 100 yards (91^m4) northwest of Lauder Island is a shallow rock connected to the long shelving point nearly opposite it by a ridge narrowing the channel and limiting the depth to 12 feet (3^m7).

Mayne Island is situated about half a mile north of Lauder Island.

Beacon.—On the summit of a rock, about 100 yards (91^m4) southward of Mayne Island, is erected a pyramidal beacon, painted white, surmounted by a white triangular topmark.

Richards Island is situated southwestward of Mayne Island.

Chart 2285.

Beacon.—On the east extreme of Richards Island is erected a pyramidal beacon painted red, and surmounted by a square topmark painted white. This beacon lies about 300 yards (274^m3) west of the beacon south of Mayne Island, the channel being between the two.

Sidney Island, bigger than the surrounding islands, is situated one-quarter of a mile northeast of Pointe au Baril rear leading light.

Beacon.—A pyramidal-shaped beacon, painted white, and surmounted by a white triangular topmark, is erected on the south extreme of Sidney Island. The channel is between it and the small island close southwest. The beacon is not visible from westward.

Castor Island light.—On **Barrel Rock**, 200 feet (61^m0) northwest of Castor Island, which is situated about one-third of a mile northward of Pointe au Baril rear leading light, is erected an iron mast, from which a *flashing red* light is shown at a height of 14 feet (4^m3). The channel to Twin Sisters Islands, is south of the former, but that to Pointe au Baril railway station is north of it.

Double Island (*Lat. 45° 33' N., Long. 80° 30' W.*), consisting of two islets, is situated one-quarter of a mile southeastward of Pointe au Baril front leading light (*see page 223*).

A shoal, with less than 6 feet (1^m8) of water on it, lies midway between the eastern islet of Double Island and the main shore. A black spar buoy is moored on the south side of this shoal. A red spar buoy is moored northward of Double Island.

Directions.—Pointe au Baril to Twin Sisters Islands by Shawanaga Passage.—The distance from Pointe au Baril front leading light to Twin Sisters Islands is 11½ (10 nautical) miles. Speaking generally, this passage may be divided into three divisions or reaches, that from Pointe au Baril to Abbott Island taking the name of the former; Abbott Island to Turning Island may be termed Middle Reach; while the remaining portion is really a portion of Shawanaga Inlet.

Beacons.—A series of red beacons and white beacons have been erected on the turning points of the islands—already alluded to—which border the passage, and by means of these, the directions here given, and the chart, a vessel drawing 12 feet (3^m7) of water (*see page 223*) should have no difficulty in getting through, unless at an extreme low water stage similar to that of 1934.

In colouring these beacons, the channel has been considered as leading to Parry Sound, and these beacons are painted red, which a vessel must leave on her starboard hand in proceeding thither from Pointe au Baril.

In strict conformity with the Canadian system of buoyage, those beacons on the port hand should have been painted black, but as white is more conspicuous against the dark trees and rocks it has been here adopted. With the exception of the rock, with less than 6 feet (1^m8) of water on it, lying 75 yards (68^m8) northeast of the southeastern Double Island and marked with a black spar buoy, there are no dangers in the Pointe au Baril Reach until in the vicinity of Lauder Island, between which and Pointe au Baril rear range lighthouse, there are one red and three white beacons, in addition to the two white beacons forming Sing Narrows range.

Abbott Island to Turning Island.—After emerging from the beacons channel between Pointe au Baril and Haggart Point, haul sharply southward,

Chart 2285.

passing close eastward of Abbott Island beacon, and then steer eastward to pass between Ripple Rock red buoy and Duke Rock, keeping the south extremities of Abbott and Passage Islands together with Sedgewick Point in line, bearing
 5 about 257°. When abreast of Pym Rock beacon, haul to starboard, so as to bring the north fall of the bluff at the Indian Cove open north of Turning Island the breadth of the latter, bearing about 122°, until a quarter of a mile from Turning Island, when alter course so as to pass about 100 yards (91^m4) west of it. Twin Sisters Islands will then be seen between Grave and Lloyd Islands. Steer
 10 for it so, with the west end of Turning Island in line with east end of Mackey Island, bearing about 003°. This range leads 100 yards (91^m4) east of Grave Island, and when past MacGregor Rock keep Turning Island its breadth open east of Grave Island bearing 004°.

This mark should be kept on astern, the vessel heading for about the north-
 15 west extremity of Twin Sisters Islands. When a quarter of a mile from the latter, a vessel will be midway between Jack Reef with 5 feet (1^m5), and Pease Rock with 10 feet (3^m0) over it, and the Northwest Oak Island of Shebeshekong Bay a little open eastward of Twin Sisters Islands, when the course may be altered to pass about 150 yards (137^m2) eastward of Twin Sisters Islands.

20 **Beacon.**—A red beacon surmounted by a white cross is erected on the south-east extremity of Twin Sisters Islands (*see* page 214).

Directions.—**Twin Sisters Islands to Pointe au Baril.**—Pass 150 yards (137^m2) eastward of Twin Sisters Islands beacon, and coast along its northeast side keeping the northwest Oak Island in sight, until Turning Island appears its
 25 own breadth eastward of Grave Island. Keep the islands in this position, bearing 004°, with the northwest point of Twin Sisters Islands astern. When nearing MacGregor Rock, and not wishing to pass over it, keep the northeast extremity of Mackey Island touching the west side of Turning Island, bearing about 003°, until up to the latter.

30 Pass 100 yards (91^m4) west of it, steering northward until the north fall of the wooded bluff in Indian Cove comes northward of Turning Island the breadth of the latter. Keep these objects in this position astern, with Pym Rock beacon ahead, bearing about 305°. When 200 yards (182^m9) from the latter, the south points of Abbott and Passage Islands will be seen in line with Sedgewick Point.
 35 These should be kept so in order to lead north of Ripple Rock, marked by a red spar buoy. Pass between Abbott Island and that next eastward of it, and follow the line of the red beacons and white beacons, taking care to pass northeastward of the sunken rock in the bight northeastward of the eastern Lauder Island by keeping the Sing Narrows leading beacons in line astern, bearing about 112°.

40 When Sidney Island is reached, Pointe au Baril will be seen and may be steered for, passing close to the north point of Double Island to avoid the rock, with 4 feet (1^m2) of water over it, lying midway between Double Island and the main shore, and marked by a black spar buoy. Pass close to the front lighthouse and bring the lights in line astern (*see* page 223) to lead out into the bay.

45 **Anchorage.**—Excellent anchorage will be found eastward of Double Island by anchoring in 6 fathoms (11^m0) with the front lighthouse over Double Island and distant rather further from the last mentioned than from Johnny Rock.

Pointe au Baril.—This is the first place of any importance north of Parry Sound. The approach to the back waters of Shawanaga Inlet together with its
 50 summer visitors, renders it more important than does its fishery, for which, of

Charts 2285, 2201.

course, it is well situated. It is of consequence too, as being an excellent harbour and the only one that a stranger could take between Byng Inlet and the anchorage under Mink Islands. (*see plan on chart 2285*).

Lookout Island, which gives the shelter to the harbour of Pointe au Baril, is a third of a mile broad, and, including the islands on the north side is three-quarters of a mile long. The summit, near its northeast extremity, is 42 feet (12^m8) high. There is a passage into the harbour on either side of Lookout Island, but the eastern channel is fit only for boats on account of the many shallow spots in the approach to it.

Bell-buoy.—A black bell-buoy, marking the entrance to Pointe au Baril Harbour, is moored in 7 fathoms (12^m8) of water, bearing 285°, distant 2 $\frac{3}{4}$ miles from the front leading light.

Minnie Rock, 2 feet (0^m6) high, is two-thirds of a mile northwestward of the front range lighthouse and 120 yards north of the ship's track. It lies the same distance off the point dividing Nares Inlet from the bay northwestward of the front lighthouse.

Although a vessel has to run the gauntlet between many shoals, and moreover the passage $1\frac{1}{10}$ miles from the outer range lighthouse is only 150 yards (137^m2) wide, yet the leading lights by being so far apart are so sensitive that the mariner can confidently rely upon the two lights in one taking him in, with not less than 15 feet (4^m6), although at very low stages of the water there may be 6 feet (1^m8) less.

A small steamer from French River of Byng Inlet bound for Parry Sound, by taking the inside passage via Pointe au Baril would, with the exception of the gap between Red Rock lighthouse and Snake Island, have smooth water from Pointe au Baril to Parry Sound, which notwithstanding adding 4 miles to the distance, would be a great advantage in westerly gales.

Between Pointe au Baril and Twin Sisters Islands at the southern entrance of Shawanaga Inlet, a vessel can carry 12 feet (3^m7) with the water surface 579 feet above mean tide at New York. In the year of the survey (1886), the water was 4 feet above that datum.

Leading lights.—**Fog signal.**—Two leading lights are exhibited at Pointe au Baril. The front light is exhibited at an elevation of 38 feet (11^m6), from a white tower on Pointe au Baril and is *fixed white*; the rear light is exhibited, at an elevation of 93 feet (28^m3), from a steel skeleton tower, with white, enclosed upper part, on an island nine-tenths of a mile, 105°, from the front light. The light is *fixed red*.

A hand fog-horn at the front light answers signals from vessels.

Wharf.—On the mainland shore, about 200 yards (182^m9) east of the front light, is a small boat wharf, where gasoline is available.

Baker Rocks (*Lat. 45° 33' N., Long. 80° 30' W.*), lie about one cable west of Double Island. There is a large hotel and a convenient landing wharf on the northeastern rock.

Charts 2285, 2201.

The community of **Pointe au Baril Station** is reached through Sturgeon Bay and its arm Sucker Creek, on which it is situated. It is distant $6\frac{1}{2}$ miles from the front leading light. The channel from Pointe au Baril to the station
 5 is suitable only for small craft and has not been surveyed. It follows the shore of the mainland and is marked by buoys, privately maintained, and the following lights, in addition to that on Castor Island already described (*see* page 221).

Brignall Narrows light.—On the south side of the channel at the entrance to the narrows, a pole exhibits a *flashing red* light at a height of 25 feet (7^m6).
 10 This light is situated about 4 miles eastward from the front leading light.

Opeechee light.—A small vessel, bound for Pointe au Baril railway station, should pass northward of the above light, and follow the main shore for a distance of about $4\frac{3}{4}$ miles to Sturgeon Bay, in the middle of which lies Opeechee Island with several other small ones. On the south point of Opeechee Island is erected
 15 an iron mast, from which is shown a *flashing white* light at a height of 14 feet (4^m3). The station is at the east end of Sucker Creek, the long narrow cove situated east of Opeechee Island.

A more southerly route to Pointe au Baril Station branches from the main channel at Ripple Rock (*see* page 220), passes southward of **Jergens Island**,
 20 westward of **Rogers Island**, and joins the northern channel at Brignall Narrows. It is marked by the following lights and by buoys privately maintained.

Jergens Island and Rogers Island lights.—Two *flashing red* lights on posts have been placed to mark the above channel. The one standing on the south-east point of Jergens Island is 16 feet (4^m9) high and the other, on a shoal north-
 25 ward of Rogers Island is 16 feet (4^m9) high. This latter pole carries a white diamond-shaped daymark.

Wharf.—There is a Government wharf at Pointe au Baril Station, 505 feet (153^m9) in length and with a depth of 4 to 6 feet (1^m2 to 1^m8) alongside.

Light.—A *fixed red* light is shown, at an elevation of 16 feet (4^m9) from a
 30 pole on the outer end of the above wharf.

The outside coast and dangers between McCoy Islands and Pointe au Baril will be now described:—

The western shore of the large group of islands which shelter the inside passage from Twin Sisters Islands to Pointe au Baril (*see* page 222) is very
 35 ragged and shallow, and no vessel should pass northeastward of the line joining Black Bill and McCoy Islands.

McCoy Islands is the name given to the two northwestern wooded islands of the large group extending northward from Mink Islands commonly called The Minks. From the western and smaller McCoy Island, 16 feet (4^m9) high,
 40 dry rocks and bare islets extend between northwest and west, a distance of $1\frac{2}{3}$ miles.

South West Island is the name given to an almost bare islet situated one mile westward from the smaller McCoy Island. Its flat summit is 14 feet (4^m3) high and a depth of 10 fathoms (18^m3) approaches to within half a mile of its
 45 western side, and one-quarter of a mile southward.

McCoy Shoal, with 11 feet (3^m4) least water over it, lies one-third of a mile west from South West Island and a depth of 12 fathoms (21^m9) will be found westward and southward close to the shoal.

Chart 2285.

Bassett Rocks, with 7 feet (2^m1) of water on it, is situated one mile south-eastward from South West Island, with deep water close westward.

Kenneth Patches, with 9 to 18 feet (2^m7 to 5^m5) over them, extend a mile northward from South West Island, with deep water close westward. 5

Colin Rock, awash, lies northwesterly about three-quarters of a mile from South West Island; another rock of similar character, called **Duncan Rock**, lies a third of a mile northeast from Colin Rock, both being situated a quarter of a mile westward of the outer islet.

Caution.—There being 12 fathoms (21^m9) close to these shoals, the lead in 10 thick weather will give little warning in approaching them.

An 18-foot (5^m5) patch bears 326° , distant $2\frac{1}{2}$ miles, from the southwest point of South West Island.

Black Bill Islands are a group of islets, or more strictly speaking, bare rocks, situated $5\frac{1}{2}$ miles northwest from the western McCoy Island and 4 miles south- 15 west from the summit of Lookout Island, Pointe au Baril. The highest rock is 9 feet (2^m7) high. These rocks occupy a space of about half a square mile and are surrounded by shallow water, the space between them and O'Brien Islands being totally unfit for the passage of anything larger than a fishing boat.

South East Rock is the southeastern of the Black Bills. It stands alone, 20 is 5 feet (1^m5) high, and a shallow bank makes off from it in a southerly direction half a mile.

Caution.—A vessel should not shoal to less than 10 fathoms (18^m3) in the vicinity of the Black Bills. As before remarked, there is no passage for a vessel 25 northeast of these rocks.

Black Bill Islands lie on a shallow bank strewn with rocks and extending one and a quarter miles southeastward from the 9-foot (2^m7) high island of the group; three-quarters of a mile westward from same island is **Oliver Rock**, with less than 6 feet (1^m8) of water over it; three-quarters of a mile northwesterly lies **Eagle Reef**, with less than 6 feet (1^m8) of water over it; and three-quarters of 30 a mile northward from the same island, there is a narrow and deep gully partially separating the bank from the long spit of shallow water, extending three miles southwestward from O'Brien Islands.

O'Brien Islands are the outer two of the string stretching southwestward from Lookout Island, the larger and inner one of the two being 8 feet (2^m4) high; 35 they are sometimes called the inside Black Bills.

Doran Rock, 6 feet (1^m8) high, lies two-thirds of a mile southeasterly from the outer O'Brien Island.

Vail Rock, with 10 feet (3^m0) of water over it, lies 3 miles southwestward from O'Brien Islands. 40

Lindsay Rock, just covered and generally breaking, is situated $1\frac{1}{3}$ miles northwestward from the highest Black Bill and half a mile northward from Vail Rock.

Meaford Shoal (*Lat. $45^\circ 32'$ N., Long. $80^\circ 36'$ W.*), with 6 feet (1^m8) of water on it, lies half a mile westward from Lindsay Rock. 45

Chart 2285.

McKenney Reef, with 10 feet (3^m0) of water on it, is the end of a shoal extending half a mile northward from Lindsay Rock.

Challenger Rock, with only 2 feet (0^m6) of water over it, lies $1\frac{1}{4}$ miles north-
5 west from O'Brien Island, and 300 yards (274^m3) north of this shallow spot is a patch with 9 feet (2^m7) on it.

Corner Rock, with 15 feet (4^m6) over it, is the outermost shoal in this locality, and from it the front range lighthouse is over the middle of the largest of the Armstrong Rocks. The shoal is half a mile southward of the range, and
10 $2\frac{1}{2}$ miles from the front range lighthouse.

Beacons.—Two white beacons are erected upon the shore $2\frac{1}{3}$ miles north-
westward of Pointe au Baril front lighthouse, which, kept in line, bearing about 039° , will lead a vessel northwestward of Corner Rock and the Black Bills.

Armstrong Rocks, 9 feet (2^m7) high, are situated opposite **Minnie Rock**,
15 the middle and largest one having, in 1886, an isolated balsam tree near the south extremity. The distance from these rocks to Minnie Rock is 300 yards (274^m3), but the navigable channel is further contracted by a rock, with 7 feet (2^m1) of water on it, lying 100 yards (91^m4) north of the largest Armstrong Rock. This together with the little flat off Minnie Rock renders it necessary that the line of
20 the leading lights should be rigidly adhered to. Small craft pass between Armstrong Rocks and **Lookout Island**. (See view on chart 2285.)

Kennedy Bank is one of the most dangerous shoals on this shore, there being only 9 feet (2^m7) in two places, and in low stages there may be 6 feet (1^m8) less. The northwestern shoal spot bears 265° , and is distant $4\frac{3}{4}$ miles, from the
25 highest Black Bill Island, the second patch with the same depth lying a quarter of a mile southeast of it. These spots are the shoalest parts of a large bank, which under the depth of 6 fathoms (11^m0) is $1\frac{3}{4}$ miles long north and south, with a maximum breadth of three-quarters of a mile. The soundings off the east side of the bank give no warning of its vicinity, there being 14 fathoms (24^m6) at
30 100 yards (91^m4) distance and much the same depth until within $1\frac{1}{2}$ miles of the Black Bills, but from the southwest and northwest good indication is given with the lead, and if a vessel keeps in no less than 10 fathoms (18^m3) she cannot touch either patch.

Buoy.—A spar buoy, painted with black and red horizontal bands, is moored
35 northeast of the shoalest part of the bank.

McIntosh Bank, with least water of 21 feet (6^m4), bears 160° , distant $2\frac{1}{4}$ miles from the northwestern shoal spot of Kennedy Bank and is separated from Kennedy Bank by a hollow half a mile wide, and 14 fathoms (24^m6) deep. This rocky bank, under the depth of 6 fathoms (11^m0) is a mile long by one-third of a
40 mile in breadth.

In thick weather, if a vessel from the southeast shoals her water to the depths on this bank, deepens it, and shortly shoals again, she will likely be in the proximity of Kennedy Bank.

Heart Bank, with least water $4\frac{1}{4}$ fathoms (7^m6), and taking its name from
45 the shape of the 10-fathom (18^m3) line, is situated $3\frac{1}{2}$ miles northwestward of Kennedy Bank. Within the depth of 10 fathoms (18^m3), it is two-thirds of a mile in diameter. A vessel, on a course of about 155° , in thick weather, getting a sounding of from $4\frac{1}{4}$ to 7 fathoms (7^m3 to 12^m8), then deepening the water from 12 to 16 fathoms (21^m9 to 29^m3) for 2 miles, and again shoaling to less than
50 10 fathoms (18^m3), will probably be on part of Kennedy Bank and in danger of running on one of the spots of 9 feet (2^m7).

Chart 2285.

The shore north of Pointe au Baril

From Pointe au Baril, the broken up coast continues in a generally straight northwesterly direction 6 miles to Hangdog Point, and, for this distance, there is nothing remarkable about the coastline which presents the same low, sparsely-wooded, shallow shore studded with innumerable islands and rocks. As little as 12 feet (3^m7) in spots is found one mile off, to avoid which, a vessel should not shoal to less than 7 fathoms (12^m8). 5

Hangdog Point is a broken up foul point on the south side of Alexander Inlet. In approaching Alexander Inlet from the southeast, the point should receive a good berth, as there is only 11 feet (3^m4) of water on **Hangdog Bank** one mile southwestward of the point. In thick weather, a vessel in this vicinity should keep in more than 7 fathoms (12^m8). 10

***Alexander Inlet** is the name given to a little harbour 2 miles south-eastward of the mouth of Naishcotyang River. It is also 8 (7 nautical) miles southeast from Gereaux Island lighthouse of Byng Inlet, 6 $\frac{2}{3}$ (5 $\frac{3}{4}$ nautical) miles northwestward of Pointe au Baril Harbour. Excellent anchorage, in 3 fathoms (5^m5) over mud, can be had in Alexander Inlet with perfect shelter from all winds, and 13 feet (4^m0) (at low stages there may be 6 feet (1^m8) less) can be carried in by bringing the south point of North Reef in line with north side of **Meneilly Island**, bearing 103°. For the use of the surveying steamer *Bayfield* two beacons were erected upon this line, but without such aids or buoys no stranger should attempt to enter. 15 20

The Sisters are a patch of rocks, awash, and similar to a cluster known as **The Brothers**, both patches lying 300 yards (274^m3) westward of the entrance, the channel being between them. These shoals break heavily in a strong westerly breeze more particularly **The Brothers**, rendering the passage anything but inviting, but the latter are steep-to on the north side. 25

Sylvia Rock, with 5 feet (1^m5) on it, lies on the north side of the channel near the entrance, which is between two clusters of rocks 3 or 4 feet (0^m9 or 1^m2) high, the northern point being known as **North Reef**, and the southern as **South Reef**. **Sylvia Rock** lies southeast nearly 100 yards (91^m4) from North Reef. It is a very small rock and should be buoyed by anybody frequenting this port. A glance at the enlarged plan will show that, proceeding up the inlet in mid-channel, there is no danger in the way excepting **Snap Rock** (small and generally showing on the south side of the passage), until abreast of the boat channel into Charles Inlet. 30 35

Harbour Reef is the worst obstruction in the harbour, and consists of several shoal rocks, with one to 4 feet (0^m3 to 1^m2) of water over them, reaching from the north shore to about the middle of the passage. 40

Dart Rock, awash, is on the south side of the channel and almost abreast of Harbour Reef, thus narrowing the passage to 70 yards (64^m0), but leaving a depth of 4 fathoms (7^m3).

***Directions for Alexander Inlet.**—Do not shoal the water to less than 7 fathoms (12^m8) until the south point of North Reef is in line with the North side of Meneilly Island, bearing 103°, the inlet will appear just closed to the northward, and the old beacons, if still standing, will appear in one. Proceed in, 45

*See plan on chart 2285.

Chart 2285.

keeping the lead going, which, if in the right track, should not give less than 13 feet (4^m0) of water on the narrow ridge joining The Brothers and Sisters. When past the former (which if not breaking generally show themselves by their yellow colour contrasting with the dark colour of the deep water on the channel edge of them) keep southward so as to avoid Sylvia Rock, and steer in mid-channel, anchoring in 3 to 3½ fathoms (5^m5 to 6^m4), 150 yards (137^m2) eastward of Harbour Reef. Here a vessel 150 feet (45^m7) long, at single anchor with 20 fathoms (36^m6) of chain, could ride out the heaviest gale, swinging clear all round.

- 10 **Charles Inlet** runs in a quarter of a mile northward of Alexander Inlet, taking a northeasterly direction for 2½ miles, when it joins Naishcotyang River by a boat channel. Though there is not room to swing at anchor at the mouth of this inlet, yet for rafting purposes a vessel can, by means of buoys, carry 3 fathoms (5^m5) in, and secure to the rocks. To proceed into Charles Inlet, keep
15 on the Alexander Inlet leading mark until the head of Charles Inlet comes in line with **Jarrab Island**, bearing about 056°, when proceed for it, passing close to the latter and northward of the sunken rocks 300 yards (274^m3) inside or northeast of Jarrad Island.

- 20 **Black Rock** (Lat. 45° 39' N., Long. 80° 36' W.) is a darkish rock, 5 feet (1^m5) high, situated one mile northwest from the northeastern entrance point of Charles Inlet; it is surrounded by shallow water.

Athabasca and Alberta Rocks, with less than 6 feet (1^m8) of water on them, lie westward one mile, and three-quarters of a mile, respectively, from Black Rock.

- 25 The mouth of the Naishcotyang River is situated one and a half miles northwestward from Charles Inlet and although there are innumerable sunken rocks in this locality, there exists a very narrow channel, by which with the assistance of buoys, 15 feet (4^m6) can be carried in by keeping close to some dry rocks off the southeast entrance point. The river from the entrance takes an easterly
30 direction 3¼ miles, where it is joined by Charles Inlet as above stated. A considerable quantity of logs were at one time brought down Naishcotyang River.

- Head Island** is one mile northwestward from the mouth of Naishcotyang River and 5½ miles southeastward of Duffy Island. This island is 26 feet (7^m9) high, and the top being bare with pines growing around the sides, it is quite
35 probable that the name was suggested by this bald appearance. This clear spot and grey rock, together with the high bent pines on the southern and largest island, make it conspicuous as marking the vicinity of Naishcotyang River.

- Garnet Rock**, 3 feet (0^m9) high, **Wolsely Rock**, 2 feet (0^m6) high, and **Mercier Rock**, one foot (0^m3) high, lie, respectively, northwest, three-quarters
40 of a mile; westward half a mile; and southward one-third of a mile from the south point of Head Island. A spot, with 15 feet (4^m6) on it, lies 1½ miles westward from the same. In fine weather, a boat may squeeze through between Head Island and the shore.

- 45 **Bouchier Islands** are another group 1¾ miles northwestward of Head Island.

Laird Rock, small and one foot (0^m3) high, lies nearly a mile southward from the southeast extremity of Norgate Rock.

- Raft Island**, which with the other islands about it form a kind of point, lies southeastward three-quarters of a mile from Norgate Rock. With the assistance
50 of buoys, a small steamer might, for lumbering or other purposes, get in as far as this, and perhaps east of the island.

Chart 2285.

Norgate Rock, 6 feet (1^m8) high, is a quarter of a mile long in a northwest and southeast direction and surrounded by shallow water. It lies 3 miles north-westward from Head Island.

Red Rock, 14 feet (4^m3) high and about 120 yards (109^m7) in diameter, lies nearly half a mile north of Norgate Rock. 5

The shore is especially foul between Red Rock and Duffy Island, the prevailing westerly winds making navigation uncomfortable for a boat. One can, however, avoid the shallow and exposed water by taking the well sheltered boat passage inside the reefs as far as Naishcotyang River. 10

McHugh Rock, round, flat, and 6 feet (1^m8) high, is situated half a mile northwest from Red Rock, and, like the other two, is surrounded with shoal water; the shallowest and most outlying spot being as follows:—

Sophia Rock, with 4 feet (1^m2) of water over it, bears 278° , distant $1\frac{1}{4}$ miles from Red Rock. 15

Sarah Rock, with 7 feet (2^m1) of water over it, lies a little over one mile southwesterly from the same.

Augusta Rock, with 5 feet (1^m5) on it, $1\frac{1}{4}$ miles southward from Red Rock.

A rock, with 11 feet (3^m4) on it, lies $1\frac{1}{2}$ miles southwest from the same, and two-thirds of a mile westward from Augusta Rock. 20

Morden Rock is a dangerous obstruction with 9 feet (2^m7) of water over it, lying 236° , distant $2\frac{1}{2}$ miles from Red Rock. This danger lies $3\frac{2}{3}$ miles south-eastward from the light-buoy moored on the line of Byng Inlet leading lights.

Buoy.—A horizontally-striped black and red spar buoy is moored off the southern edge of the rock. 25

Imperial Bank, with $5\frac{1}{2}$ fathoms (10^m1) over it, lies $1\frac{1}{2}$ miles southwest from Morden Rock, and the track mentioned (page 224) from the Black Bills to Byng Inlet passes between them. Another bank, with $6\frac{1}{2}$ fathoms (11^m9) on it, lies a mile westward of the Morden Rock.

In thick weather, a vessel should not shoal to less than 12 fathoms (21^m9) in the vicinity of Morden Rock, or indeed anywhere between Byng Inlet and Pointe au Baril. 30

Wreck.—About midway between Morden Rock and Magnetawan Ledges light-buoy and a little east of their alignment, a wreck of a vessel lies. Seven fathoms (12^m8) was the least water found over the hull. 35

Several rocks, awash, lie within a small area in a southwesterly direction, distant about $2\frac{1}{4}$ miles from Gereaux lighthouse.

Chart 2293

Byng Inlet is the name given to a long and narrow arm of Georgian Bay situated 9 (8 nautical) miles northwestward from Charles Inlet. From Clark Island, the inlet runs in a general easterly direction $3\frac{3}{4}$ ($3\frac{1}{2}$ nautical) miles, to the Canadian Pacific Railway coal wharf on the north side of the inlet, and close east of the mouth of Still River. 40

Chart 2293.

Magnetawan Ledges (Lat. $45^{\circ} 44' N.$, Long. $80^{\circ} 44' W.$) are the outermost dangers lying on the south side of the entrance to Byng Inlet. They extend in a westerly direction $2\frac{3}{4}$ miles from Duffy Island, the outer patch with 12 feet 5 (3^m7) over it, bearing 256° , 2.9 miles from Gereaux Island lighthouse, and $3\frac{1}{4}$ miles northwestward from Red Rock. There is a depth of 17 feet (5^m2) one-fifth of a mile westward from the above 12-foot (3^m7) patch. Another patch, with depths of 4 to 6 feet (1^m2 to 1^m8) over it, lies about 254° , distant 2 miles, from Gereaux lighthouse and only slightly more than one-third of a mile southward 10 of the line of the leading lights.

Light-and-bell-buoy.—In a depth of 13 fathoms (23^m8) on the line of Byng Inlet leading lights (*see below*), distant $4\frac{1}{4}$ miles from Gereaux Island light, and about one mile westward of the outer Magnetawan Ledge, is moored a 15 light-buoy, painted black with white vertical stripes, exhibiting a *flashing white* light, and sounding a bell by motion of the waves on the buoy. It is fitted with a radar reflector.

Burton Bank extends from MacNab Rocks in a southwesterly direction $1\frac{1}{3}$ miles, and westward nearly 2 miles. Its southern edge is as close as 110 yards (100^m6) to the line of Byng Inlet leading lights and extends $1\frac{1}{3}$ miles westward 20 from Gereaux lighthouse. It is a very shallow and dangerous bank, and should be carefully avoided by not standing into less than 10 fathoms (18^m3), until the leading lights are in line. The sea breaks heavily on this bank in the strong prevailing southwest winds.

Buoys.—The channel from the above light-and-bell-buoy into Byng Inlet 25 is marked by red and black spar buoys.

Duffy Island, low flat, and about 200 yards (182^m9) in diameter, lies half mile southwest of Gereaux Island lighthouse.

Old Tower Rocks, two in number, 1,000 feet (304^m8) north of Duffy Island, are separated from the island by a clear good passage for boats, 150 yards (137^m2) 30 wide.

A rock, $4\frac{1}{2}$ feet (1^m3) high, lies 100 yards (91^m4) northwest of the northern rocks, and one, awash, lies a third of a mile westward from Gereaux Island lighthouse.

Buoy.—A red spar buoy is moored a quarter of a mile northeast from this 35 last rock, about the same distance northwest from Gereaux Island lighthouse and 200 yards (182^m9) south of the range.

A patch, with one foot (0^m3) of water over it, is situated 1.1 miles westward from the same lighthouse, and, from this patch, rocks dry and awash and some with a few feet of water on them, extend eastward and southeastward.

40 **Lights.—Fog signal.**—A *fixed white* light is exhibited at an elevation of 49 feet (14^m9), from a white, square tower with dwelling attached, on **Gereaux Island**.

A hand fog horn answers vessels signals.

Two *fixed red* leading lights are exhibited. The front light at an elevation of 45 34 feet (10^m4), from a white, square tower on the mainland, three-quarters of a mile northeastward of Gereaux Island; and the rear light, at an elevation of 60 feet (18^m3), from a similar tower, 1,520 feet (463^m6), $074\frac{1}{4}^{\circ}$ from the front light.

The lights in line lead in with not less than 24 feet (7^m3) to the intersection of Clark Islands leading beacons.

Chart 2293.

Keystone Rock, (Lat. $45^{\circ} 45' N.$, Long. $80^{\circ} 39' W.$) 3 feet (0^m9) high, lies 1,800 feet (548^m6) northwestward from the Byng Inlet front leading light and 350 feet (106^m7) north of the channel, narrowing the ship channel to 300 yards (274^m3). 5

Buoys.—A black spar buoy is placed in 22 feet (6^m7) of water, 100 yards (91^m4) southeast of Keystone Rock. Another black spar buoy marks an uncharted depth of one foot (0^m3) on the edge of the 2-fathom (3^m7) contour, one quarter of a mile northward of Keystone Rock.

MacNab Rocks are a cluster of small rocks with a maximum height of 10 feet (3^m0) lying southwest of Clark Islands, and separated therefrom by a passage 250 yards (228^m5) in breadth, through which 8 feet (2^m4) may be carried by those locally acquainted. 10

Clark Islands, 36 feet (11^m0) high, lie in the mouth of the inlet, with a passage on each side of the group, but that north of them (called from that circumstance North Channel), leading for 3 miles between dangerous shoals, could not be used without being carefully marked with large buoys; this done, 8 feet (2^m4) might be carried in by light draught craft and a saving of $1\frac{3}{4}$ miles effected, if approaching from the northwest. 15

Beacons.—Upon the southeast side of the largest and northeastern of Clark Islands are erected three beacons painted white, being known as **outer** (southwest), **middle**, and **inner** (northeast) beacon. 20

Outer in line with **middle** beacon, bearing 051° , leads in from the line of the Byng Inlet leading lights. **Inner** and **middle** beacons in line, bearing 256° , lead through the dredged cut between Clark Islands and Pine Tree Point. 25

Ab Shoal buoys.—Marking the edge of Ab Shoal, extending southeast from the southwestern of the Clark Islands, is placed a black spar buoy. A little east and northeast of it, but on the opposite side of the channel, are moored two red spar buoys.

Clark Islands to Britt Village.—The channel from Clark Islands to the Canadian Pacific Railway coal dock at Britt village was reported dredged to a depth of 21 feet (6^m4) (1938) and is marked by buoys and beacons; it has a least width of 155 feet (47^m2). 30

Pine Tree Point beacons.—Pine Tree Point is a projection on the north shore of the inlet 700 yards (640^m1) eastward of Clark Islands, and on it are erected two triangular white beacons 78 yards (71^m3) apart, which in line bearing 076° , lead through the dredged channel between Clark Islands and Pine Tree Point. 35

The dredged cut extends about three-quarters of a mile east of Pine Tree Point and thence the narrow inlet runs inland about a mile to Old Mill Island and the channel is fairly deep. 40

Old Mill Island with its west end situated 2 miles eastward from Clark Islands, is 600 yards (548^m6) long and 130 yards (118^m9) in greatest width.

Rabbit Narrows.—**Rabbit Island**, situated close eastward of Old Mill Island, and three-quarters of a mile westward of Byng Inlet village, is a quarter of a mile in length. The ship channel between the island and south shore is named Rabbit Narrows. 45

Chart 2293.

Byng Inlet village.—The portion of the village on the north side of the inlet and immediately west of the mouth of **Still River** is known as **Britt**. Byng Inlet village is situated on the south side opposite the mouth of Still River
 5 and the Canadian Pacific Railway wharf.

The railway station of the Sudbury-Toronto branch of the Canadian Pacific Railway is distant about 2 miles from the village, and a spur line runs to the coal wharf of the railway company at Britt, where the berthing place is 500 feet (152^m4) long. A turning basin at the wharf, was dredged to a depth of 22½ feet (6^m9) in
 10 1953.

The Government wharf at Byng Inlet village has a frontage of 96 feet (29^m3); the depth alongside is 11½ feet (3^m5).

Telephone.—A private telephone line connecting the lighthouse on Gereaux Island with the Canadian Pacific Railway dock at Britt is used to advise the
 15 dock officials of the time of expected arrival of ships.

At the railway crossing at the head of Byng Inlet is the mouth of Magnetawan River, which has its source in a chain of lakes about 12 miles inland. North Magnetawan and South Magnetawan railway stations are at the crossings of the north and south arms of the river, 10 and 14 miles distant from Byng
 20 Inlet. A short distance above the head of the inlet is the first of a series of rapids.

Directions.—The course and distance, from a position half a mile south-east of the light-and-bell-buoy south of Bears Rump Shoal, to the light-buoy moored in 7 fathoms (12^m8) 1½ miles westward of Magnetawan Ledges, is 053½°, 50 (43 nautical) miles.

25 From the northwest part of Lake Huron, a vessel may enter Georgian Bay by Yeo Channel (*see* page 77), and, with the northeast point of Yeo and Lucas Islands in line abeam, the course to the same light-buoy is 065°, and distance 54½ (47½ nautical) miles.

30 **From Owen Sound**, the course from a position half a mile east of Pyette Point (3½ miles northeast of Presqu'isle) to the light-buoy is 005°; and distance 69 (60 nautical) miles.

From Killarney in a light draught vessel, the course from the north point of Green Island to the light-buoy is 114°, and distance 30½ (26½ nautical) miles. This course leads 3 miles southwest from Grondine Rock (*see* page 248) and 6
 35 miles from Bustard Rocks lighthouses, and after the first 3½ miles from Green Islands, a vessel should not have less than 10 fathoms (18^m3).

From North Channel of Lake Huron (or Killarney in a heavy draught vessel), pass close northward of Gull Island (*see* page 269), the course from which to the light-buoy before mentioned is 109°, and distance 27 (23½ nautical) miles.

40 When going the reverse way, in thick weather or at night, a good check on the distance run and the proximity of Gull Island (low and difficult to make out), is a cast of the lead on Seven Fathom Bank, lying directly on the course, distant 4½ to 5 miles from Gull Island, and between which there is a depth of 17 to 19 fathoms (31^m1 to 34^m7), the former depth being found close to Gull Island.

45 **From French River**, a course 129° from a position 1¼ miles southwest from Southwest Rock of the Bustards in line with the lighthouse, for 15¼ (13¼ nautical) miles, should lead a vessel to Magnetawan Ledges light-buoy.

Chart 2293.

From the southeast, the course from a position one mile west of the highest Black Bill Island, to the light-buoy, passing close southwest of Morden Rock buoy (*see* page 229), is 335° and distance 17 ($14\frac{2}{3}$ nautical) miles.

Anchorage.—Excellent anchorage, in $3\frac{1}{2}$ fathoms (6^m4) over mud, will be found between MacNab Rocks and the southwestern of Clark Islands, anchoring with the northeast extremity of MacNab Rocks, bearing 341° , and the southeast shore of Clark Islands, bearing about 058° . 5

Danger angle.—To those conversant with the use of a sextant, as long as the angle subtended by Gereaux Island lighthouse and the centre of Red Rock (*see* page 229) is less than $38\frac{1}{2}$ degrees a vessel will be half a mile outside, or westward of Magnetawan Ledges. 10

In thick weather, or at night, unless certain of being on the line of the leading light, a vessel should not stand into less than 12 fathoms (21^m9).

The dangers lying off the main shore between Byng Inlet and Key Harbour will now be described:— 15

Chart 2285.

Flat Rock (*Lat.* $45^{\circ} 48' N.$, *Long.* $80^{\circ} 44' W.$) applies to the larger and western of two bare islets 9 feet (2^m7) high, lying 5 miles, 316° from Gereaux lighthouse and well outside other offshore dangers. It offers a good mark for recognizing this portion of the coast. Shoal water extends 300 yards southward from this rock, and, to avoid the dangerous patches lying northwest and southeast of Flat Rock, the south point should not be brought to bear southward of 099° , nor westward of 328° . Flat Rock lies nearly $1\frac{1}{2}$ miles southeast from Gladstone Island. 20 25

Potvin Point, although really a small low wooded island, and the southwesternmost of a group, is situated nearly 2 miles southeastward of Flat Rock, and shoal water extends from it in every direction for one mile.

Lamondin Point is an irregular point, off which lie many rocks and islands, a mile and a half southeastward from Potvin Point. This group lies closer to the mainland than the Potvin Point Group. 30

A bay, with many islands in it, lies inside of Potvin Point group and north of Lamondin Point. North of this bay is another, **Sandy Bay**, which penetrates the mainland shore for about $1\frac{1}{2}$ miles and is approached from the vicinity of Flat Rock. 35

Kantos Point is a portion of the mainland $1\frac{1}{3}$ miles southeastward of Henvey Inlet, and between this point and Champlain Island is a passage for small craft, which, for the shelter afforded, run inside the group of islands next described.

Champlain Island, three-quarters of a mile long with an average breadth of 300 yards (274^m3), lies two-thirds of a mile from the main shore, and forms the southeastern and largest island of the group to be described. It is low, wooded, and indented with numerous small coves, and its northwest extremity is three-quarters of a mile east from Salisbury Island, the space between the latter and Champlain Island being thickly studded with low, dry rocks and shallow spots. The south extremity of Champlain Island is composed of a cluster of small dry rocks, and is $1\frac{1}{2}$ miles north of Flat Rock. 40 45

Chart 2285.

Gladstone Island, a bare rock 10 feet (3^m0) high, is a rather conspicuous feature. It lies $1\frac{1}{2}$ miles northwestward from Flat Rock; rocks, dry and sunken, lie off its south and west sides a quarter of a mile, and a sunken rock, with 15 feet (4^m6) over it, is situated southwest, a little over one-third of a mile from the south point of this island. A boat channel exists between Gladstone and Champlain Island. A rock, with 12 feet (3^m7) over it, lies southward half a mile from Gladstone Island.

Salisbury Island is situated seven-eighths of a mile west of the northern end of Champlain Island; it is 9 feet (2^m7) high, 300 yards (274^m3) long north and south, and quite narrow. A cluster of dry rocks extends half a mile in a southwest direction from the line adjoining this island with Beresford Island.

Zachary Rock, with one foot (0^m3) of water over it, lies nearly half a mile southwest from the south point of Salisbury Island, and $2\frac{1}{2}$ miles southeastward from Solitary Rock.

Beresford Island is a small islet, 12 feet (3^m7) high, with a few round stunted bushes growing on it, lying three-quarters of a mile north of Salisbury Island and $1\frac{1}{4}$ miles southeastward of One Tree Island.

Churchill Island is the largest of a small group just north of Beresford Island and eastward of One Tree Island.

One Tree Island takes its name from a single umbrella-shaped elm tree (growing in 1933), and is situated $1\frac{1}{4}$ miles northwestward from Beresford Island and 4 miles southwestward from Key Harbour (*see* below) at the mouth of the inlet formerly known as The Key.

Solitary Rock, 6 feet (1^m8) high, lies half a mile westward of the last mentioned island, being connected therewith by a shoal water. Its isolation renders it conspicuous and consequently serviceable in pointing out the entrance to North East Passage from the south. A few stones extend from its north end, and a rock, just level with the surface, lies a quarter of a mile northwesterly from Solitary Rock. Very shallow water also extends one-third of a mile west, and a quarter of a mile southwest from the same. Two distinct patches also lie westerly half a mile, and northwest two-thirds of a mile, respectively, from Solitary Rock, the first called **Dingy Rock** having 11 feet (3^m4), and the latter 10 feet (3^m0) over it.

Henvey Inlet, uncharted, empties into a bay of considerable size inside of Beresford and Churchill Islands. The bay contains many islands and rocks, as does the mouth of Henvey Inlet. The inlet is somewhat larger than Key Inlet, to the north; its extreme length is $6\frac{1}{2}$ miles and for the lower 5 miles it has an average width of nearly one-half mile. It is located within the limits of Henvey Inlet Indian Reserve. The Indian village, located at its head, has two churches and a school and is distant by lakes and portages only 3 miles from the head of Key Inlet and Ludgate station of the Canadian National Railways, Muskoka line.

Edsall Bank is an extensive area of depth under 10 fathoms (18^m3) extending in a general southerly direction from the entrance to Key Harbour, its outer edge being approximately $8\frac{1}{4}$ miles westward of Gladstone Island. The shoalest spot on this bank, with 18 feet (5^m5) over rock, lies 143° , distant $6\frac{1}{4}$ miles from Bustard Rocks lighthouse.

Buoy.—A red spar buoy is moored on the outer edge of this shoal.

Chart 2299.

KEY HARBOUR.—The wharves of this Canadian National Railways port, no longer used, are built on the northern entrance point of an inlet known as Key Harbour. Key Harbour is equidistant between the mouths of French River and Byng Inlet, being about 6 miles distant from each in an air line. It lies 5
3 miles northeastward of the nearest part of this line.

The channel of approach to Key Harbour, with a depth of 21 feet (6^m4) (in low stages there might be 4 feet (1^m2) less), lies north of three principal groups of islets known as Murray Rocks, Keefer Island, Bigsby Island, and Mann Island; and southward of Dead, Dokis, Wedge, Germain, and Pine Islands. 10

Buoys.—As a guide to the entrance to Key Harbour channel, a black and white fairway spar buoy is moored approximately 200°, 1¼ miles from Southeast Rock.

In addition to the several pairs of leading beacons described hereunder, the channel was marked (1950) by black and red spar buoys. 15

Charts 2299, 2285.

Frances Smith Shoal (*Lat. 45° 51' N., Long. 80° 50' W.*) is a very dangerous and extensive rocky bank, on the north side of which are two patches of dry stones one foot (0^m3) high. The shoal, with depths varying from a few inches to 12 feet (3^m7), extends over a distance of 1¼ miles in a northwest and southeast 20
direction and over one mile transversely. Its northwest side is separated from Southeast Rock by a passage a mile wide, with irregular depths exceeding in places 20 fathoms (36^m6). Several banks, with from 3 to 4 fathoms (5^m5 to 7^m3) on them, lie southwestward of Frances Smith Shoal; the outermost one, with 3½ fathoms (6^m4) on it, lying 2½ miles southwesterly from Solitary Rock. In this 25
locality in thick weather, passing vessels should not approach Frances Smith Shoal to a less depth than 8 fathoms (14^m6).

Perkins Rock, with 17 feet (5^m2) of water over it, and only important in connection with the channel of approach to Key Harbour, lies a little more than a third of a mile southward from Southeast Rock (*see page 238*). 30

A spot, with 23 feet (7^m0) of water over it, lies 2,000 feet (609^m6) 204°, from Perkins Rock.

Ruel and Bray Reefs, with 16 and 17 feet (4^m9 and 5^m2) of water over them lie, respectively, 1.6 miles, 245°, and 1.3 miles, 235° from Dead Island beacon.

Britton Shoal, with 2 feet (0^m6) of water over it, is situated at the north- 35
west end of Murray Rocks, and 200 yards (182^m9) southeast of the junction of the Dead Island, and Keefer Island beacon ranges, used in the approach to Key Harbour.

Sibald Rock lies 400 yards (365^m8) southeast of Britton Shoal and the same distance southwest of Counts Bank. It is small and one foot (0^m3) high. 40

Murray Rocks are a group of small islets and rocks situated with the southeastern and largest islet, 12 feet (3^m7) high, called **Cherry Island**, lying nearly 1¼ miles northward from Solitary Rock and 300 yards (274^m3) northwestward from **Elgin Rock**, an inlet of similar size, height, and character. From 6 to 7 fathoms (11^m0 to 12^m8) will be found between the latter and Cherry Island, 45
forming part of the channel to Key Harbour for light-draught steamers.

Charts 2299, 2285.

Dead Island, so called from the fact of its having been in olden time the burial place of the Indian tribes frequenting these parts, is situated 3 miles westward of Key Harbour. This dark wooded island including the small islet 5 5 feet (1^m5) high close south of it is nearly one mile long north and south, with a maximum breadth of a quarter of a mile.

Beacons.—A black and white, pyramidal beacon is erected on the west coast of Dead Island, which, in line with a white, rectangular beacon on Lash Island distant 700 yards (640^m1) 058° leads from the open bay to the inter- 10 section of the Keefer Island range (*see below*).

Wicksteed Rock, with 17 feet (5^m2) of water on it, is a small isolated shoal over a third of a mile southeastward from the islets above mentioned.

Pratt Island is situated nearly half a mile northeastward from the southern end of Dead Island and is 11 feet (3^m4) high.

15 **Keefer Island**, consisting of half a dozen islets, the highest of which is 10 feet (3^m0) high, is situated one mile northeastward from Murray Rocks. A shallow bank, with as little as 2 feet (0^m6) of water, extends a quarter of a mile northwestward of the group and to within 335 yards (306^m3) of the line of the Dokis Island beacons.

20 **Beacons.**—On the highest Keefer Island is erected a red and white pyramidal beacon, and on a southern islet of the Bigsby Island Group is placed the rear beacon of this range, rectangular in shape, painted red and white. These in line, bearing 092°, lead from Dead Island range to Dokis Island range.

25 **Alwin Rock** lies 760 yards (684^m9) westward of the north point of Bigsby Island and has 17 feet (5^m2) of water over it.

Hanna Bank, 300 yards (274^m3) long in a northeasterly and southwesterly direction, with 12 feet (3^m7) of water on it, lies between Bigsby and Dokis Islands.

30 **Bigsby Island** is the name given to a larger group 16 feet (4^m9) in height, lying half a mile northeastward of Keefer Island. From its northern part shoal water extends towards the range 130 yards (118^m9).

35 **Dokis Island** is situated with its south end 1³/₄ miles northeastward from the south point (islets) of Dead Island. The island is 2¹/₄ miles long trending north and south, which is the characteristic direction of the neighbouring islands and points. The ground of Dokis Island near the south end is 12 feet (3^m7) high, and its steep south fall together with its high pines renders the island a conspicuous feature.

Moose Inn lodge, a fishing resort, is on a small island close to the east shore of Dokis Island.

40 **Beacons.**—Two sets of leading beacons are established at the south end of Dokis Island. Both beacons of the northeasterly range, the front one of which is at the same time the rear beacon of the easterly range, are rectangular and painted black and white; the front beacon of the other range is pyramidal in shape and painted white.

45 The western and northern beacons, 620 feet (188^m9) apart show, the centre line of the channel from Keefer Island alignment to Hanna Bank. The course is 043°.

The eastern and western beacons in line, 175 feet (55^m3) apart, show the centre line of the channel leading into Key Harbour and the course is 097°.

Charts 2299, 2285.

Anchorage, in 10 to 12 fathoms (18^m3 to 21^m9) can be had 500 yards (457^m2) southeast of the front beacon and 200 yards (182^m9) south of the Lash Island alignment.

Wedge Island, 12 feet (3^m7) high, is the highest of a small group of four islets on the north side of the channel, and half a mile eastward from Dokis Island. 5

Mann Island, 20 feet (6^m1) high, is the name given to the largest of a group of islets lying east of and almost connected with the Bigsby Island group.

Phillips Shoal is nearly 200 yards (182^m9 long in a northeast and south-westerly direction with 13 feet (4^m0) of water on its shoalest and most southerly part. 10

Key Harbour.—A wharf, for the unloading of coal and other materials, is built at the north entrance point of Key Inlet, the former iron ore dock being now abandoned. The berthing place is 300 feet (91^m4) long with a depth of 23 feet (7^m0); this depth extends about 500 feet (152^m4) eastward from the outer end of the wharf, tapering from a width of 180 (54^m9) at its western end of 100 feet (30^m5) at the inner end. Owing to the limited turning room, local assistance is sometimes necessary in berthing a vessel. The coal dock is no longer used. 15

Key Inlet is the continuation of Key Harbour, and penetrates eastward into the mainland for 9½ miles, with an almost constant width of one-eighth of a mile, resembling a river. 20

Ludgate is a station of the Canadian National Railways at the head of the inlet. The Canadian Pacific Railway line also passes close by, and there are two hotels open during the summer months. Key Inlet is uncharted, but motor-boats have penetrated to its head without any difficulty. 25

The south shore of the inlet is part of an Indian reserve.

Key Junction of the Canadian National Railways is reached by the Key Harbour branch line northward about 7 miles.

Passage southeast of Murray Rocks.—A light draught steamer from the south, bound to Key Harbour, may, with local acquaintance, shorten the distance to Key Harbour and have smoother water by following the directions now given: 30

Entering North East Passage from the south (*see* page 241) soon after passing the shoal from Solitary Rock, and also Dingy Rock (*see* page 234), the southeast point of Dokis Island will be seen to come in line with the southeast Murray Rock (Cherry Island), bearing 037°. 35

Steer for them thus, with not less than 16 feet (4^m9) of water. Pass close southeast of Cherry Island—the water is deep—and thence steer 026° for the west side of Dokis Island, steaming slowly and keeping the lead going, for a little more than a mile, when Keefer Island with (in 1886) two conspicuous trees upon it, will be a third of a mile on the starboard beam. Continue the same 026° course for another six-tenths of a mile, taking care to pass northwest of the 2-foot (0^m6) rock, lying a quarter of a mile north of the Keefer Island Group (*see* page 236), when the northeastern range of beacons on Dokis Island should be in line, bearing 043°, and may be steered for as directed above. 45

Chart 2299, 2285.

Southeast Rock (*Lat.* $45^{\circ} 52' N.$, *Long.* $80^{\circ} 52' W.$) is isolated, smooth, and 10 feet (3^m0) high, situated 2 miles 034° from Key Harbour entrance buoy, and one-third of a mile southeast of Gull Rocks. The line of the Dead Island
5 leading beacons (*see* page 236) passes two-thirds of a mile southeastward of Southeast Rock.

Gull Rocks, one-half mile northwest from Southeast Rock, consists of a cluster of small bare rocks covering an area about a third of a mile in diameter, the highest rock being 10 feet (3^m0) high. Between Bustard Islands and Gull
10 Rocks, there is no passage for a vessel, and even for boats it is dangerous in a heavy sea.

Chart 2285.

Goldwin Rock, with 8 feet (2^m4) of water over it, lies northeastward three-quarters of a mile from Southeast Rock, the vessel's track passing midway
15 between them.

Buoy.—Godwin Rock is marked by a red and black spar buoy.

Bagot Rock, with 11 feet (3^m4) on it, lies nearly half a mile northward from Gull Rocks; a rock, awash, lies one-quarter of a mile north of Gull Rocks, and a patch, with 12 feet (3^m9) on it, lies one-third of a mile northeastward of the same
20 rocks.

Buoy.—A black spar buoy is moored northeast of Bagot Rock.

Black Rock (*Lat.* $45^{\circ} 53' N.$, *Long.* $80^{\circ} 52' W.$) is of a darkish colour quite alone, 5 feet (1^m3) high and is situated two-thirds of a mile, northeast from the highest Gull Rock. It is about 25 yards (22^m9) long north and south, and a spit
25 makes out 50 yards (45^m7) from its north end, with exception the water is deep all around it. The channel passes from 100 yards (91^m4) to 150 yards (137^m2) northward of this rock.

Pickerel River.—The northeast corner of Georgian Bay forms roughly a right angle, the general direction of a line drawn through the islands and points
30 of the north coast being west from Key Harbour. In this corner, and just north of Key Harbour are the several mouths of **Pickerel River** which for about 6 miles trends northward upstream and thence eastward for many miles inland. There are about seven channels forming its mouth, separated by islands, the largest of which is Dokis (*see* page 236). Its waters are uncharted, but the
35 lower reaches are frequented by fishing and cruising parties.

The Canadian National Railways crosses the Pickerel River at Pickerel River station, about 7 miles from the mouth, and the Canadian Pacific at a point about 10 miles farther upstream at **Wanikewin station**, in the lower French River Indian Reserve. Pickerel River is connected with French River at
40 **Pickerel Bay**, an arm of Ox Bay.

Immediately west of the mouth of Pickerel River and the islands in its mouth is a point of land, a mile in breadth, its southern extremity being much broken by a series of small points and bays running north and south, the southernmost reaching almost to Dead Island (*see* page 000). On the west side of this land lies
45 another bay, almost completely filled with islands, the largest of which is **Fox Island**. There are several narrow inlets at the head of this bay and from the eastern one, entered by Fox Island, a quarter mile portage leads northward to **Fox Lake** whose northern end is near the Pickerel River.

Chart 2285.

Bustard Islands.—This important group of islands and rocks is situated $1\frac{3}{4}$ miles southward of the entrance to French River proper, South Point, bearing 098° , distant $19\frac{1}{2}$ (17 nautical) miles from the north end of Green Island, and 306° , $15\frac{1}{2}$ ($13\frac{1}{2}$ nautical) miles from Gereaux Island lighthouse, Byng Inlet. This group has an extreme length of nearly 4 miles, and is 2 miles broad in a north and south direction. 5

It is broken up into an almost innumerable number of islands, islets, rocks above, and rocks below water of every size, shape and description. They are composed like the remainder of the shore of gneiss, with occasional dark veins of hornblende character, possibly indicative of larger hidden masses of the same which may contain magnetite, and account for the abnormal variation of the compass, observed in this locality. 10

Bustard Islands, when seen from the south, are scarcely distinguishable from the main shore, but from the west the higher character of the north side together with the gap caused by the little harbour (*see* page 241) render them unmistakable. In the afternoon, too, the sun shows up the three white lighthouses on Bustard Rocks. The string of rocks, which extends three-quarters of a mile southwestward from the lighthouse, is usually known as **Bustard Rocks** by reason of being utterly bare of vegetation. 15 20

Shoal.—A shoal, the existence of which is doubtful, with a least depth of 18 feet (5^m5), is charted about $8\frac{1}{4}$ miles, $197\frac{1}{2}^\circ$, from Bustard Rocks outer front light.

Lights.—Main light.—Bustard Rocks lighthouses are situated three-quarters of a mile from the extreme southwest end of the chain $5\frac{1}{4}$ miles north-westward from Key Harbour entrance buoy, and 4 miles southwestward from Lefroy Island lighthouse, French River. They are three in number; the main lighthouse, for general purposes, being a wooden tower painted white, which, from a height of 48 feet (14^m6), exhibits a *fixed white* light, visible 14 (12 nautical) miles. This light is visible all round except over Bustard Islands. 25 30

Northeast range.—This similar, but small building, is situated 043° , distant 73 yards (66^m8) from the above-mentioned. It shows from a height of 30 feet (4^m1), a *fixed green* light, visible in the direction of French River, 7 (6 nautical) miles. These two lights in one astern, bearing 219° , lead towards the entrance of the river, until the lights there are seen in one. 35

Southwest range.—The third lighthouse is similar to the others in appearance, but smaller than the main building, and situated 254° , distant 64 yards (58^m5) from it. It exhibits from a height of 27 feet (8^m2), a *fixed green* light visible 12 (10 nautical) miles, over a small arc on each side of the alignment. This light, in line with the main light, bearing 074° , leads in from deep water, south of Isabel Rock and north of Perley Rock. 40

There is excellent boat landing at the main lighthouse in any weather.

Note.—The main lighthouse, and the highest and broadest of the three stands southward of the other two, and in approaching the Bustards from the southeast, will first appear in line with the northeast or smaller light tower. After passing this line, the two smaller buildings will come in line and should also be passed; finally, the southwest and smaller lighthouse will come in line, with the main tower constituting Southwest range, which should be steered for as directed (*see* page 244). 45

Chart 2285

Southwest Rock is the outer one of the chain just spoken of; it is 5 feet (1^m5) high, with a spit extending from it in a southwesterly direction 200 yards (182^m9).

- 5 **Perley Rock** (*Lat. 45° 53' N., Long. 80° 59' W.*), with 9 feet (2^m7) of water over it, lies two-thirds of a mile westward from Southwest Rock, and another called **Belize Rock**, with 12 feet (3^m7) on it, lies half a mile southward from the same. Between these positions, there are several other shoals with depths on them ranging from 12 to 17 feet (3^m7 to 5^m2). As these rocks are of an extremely
10 pinnacly nature, Southwest Rock should not be rounded nearer than 1½ miles in a heavy sea, and in thick weather a vessel should keep in deeper water than 10 fathoms (18^m3). No stranger should pass between these shoals and Southwest Rock at any time.

- Buoy.**—A red spar buoy is moored about 500 feet (152^m4) southwest of
15 Perley Rock.

- South Point** is the most southerly point or islet in the Bustard Group. From eastward and westward it was, in 1886, well marked by a single tree leaning to the northeast from the almost constant southwest winds. The bight between
20 South Point and Southwest Rock is full of rocks awash, and some with very little water on them, and from South Point itself shoal water extends over half a mile southward where there is a depth of 10 feet (3^m0).

Burke Shoal, with 11 feet (3^m4) of water on it, lies a quarter of a mile northeast from **Northeast Point** and 200 yards (182^m9) from the nearest Bustard Island, the channel being between the latter and Burke Shoal.

- 25 **Buoy.**—A red spar buoy is moored on the western side of Burke Shoal.

Tie Island, lies two-thirds of a mile northwestward from Northeast Point and is the next island eastward of **North Island**. Northward 200 yards (182^m9) from the middle of this island is a patch, with 15 feet (4^m6) over it, called **Minnie Rock**, with 10 fathoms (18^m3) between them.

- 30 **Hall Rock**, with 12 feet (3^m7) of water on it, lies a quarter of a mile eastward of Minnie Rock, and 200 yards (182^m9) northward of the first small island eastward of Tie Island; the passage is between Hall Rock and the Bustards, close to the north coast of which the water is deep.

- North Island** is the northernmost island of the Bustards, its western side
35 being composed of a steep bluff 35 feet (10^m1) high, the highest land in the group.

Queen Reef, a quarter of a mile long east and west, with 7 feet (2^m1) least water on it, is situated with its west extremity half a mile northwestward from the west point of Tie Island.

- Buoys.**—A red spar buoy is moored on the south side of Hall Rock. A
40 similar buoy marks the southwesterly extremity of Queen Reef.

Double Island, on the north coast of the Bustards, lies with the north end of the eastern and larger islands a little less than half a mile northwestward from the west point of Tie Island. Its north point is steep-to, and the passage eastward of it has from 4 to 5 fathoms (7^m3 to 9^m1).

- 45 **Camel Rock**, 5 feet (1^m5) high, is situated between Ridout and Double Islands, being joined to the latter by sunken rocks and a dry stone; good water may be carried in between Ridout Islands and Camel Rock.

Chart 2285.

Ridout Islands, three in number, partially wooded with scattered pines, lie one and a half miles northeastward from Bustard Rocks lighthouse, and the northwest, north and east sides may be approached to 100 yards (91^m4).

A rock, with 14 feet (4^m3) of water on it, lies half a mile northward from the north point of Ridout Islands, and about 350 yards (320^m0) southeastward of the track into French River. 5

Castle Island forms the northeastern of Bustard Rocks, being quite bare and 26 feet (7^m9) in height; some dry rocks extend from it in a northeasterly direction nearly 200 yards (182^m9), which may be approached to 100 yards (91^m4), as may the whole northwest side of Bustard Rocks. 10

Anchorage may be had under the north coast of Bustard Islands, by steering from 200 yards (182^m9) off Castle Islands to the same distance north of Ridout Islands. Haul round eastward of the latter, midway between them and Camel Rock; pass rather nearer the north coast of the Bustards than the latter, to avoid a spit from it, and anchor close under the coast, with the western Double Island in line with the mouth of French River, or proceed nearly a quarter of a mile further eastward, where there will be still better shelter. 15

Bustard Islands Harbour.—The entrance to this snug little harbour and fishing station is half a mile southeastward of Camel Rock. A depth of 15 feet (4^m6) may be carried in between Harbour Island and the north coast of the Bustards, southward of it. When the island is passed, the water will deepen to 4 or 5 fathoms (7^m3 or 9^m1) mud, and the vessel's head should be turned sharply to starboard and the anchor let go in the middle of the space just sufficient for a vessel 130 feet (39^m6) long to swing. This harbour cannot be recommended to vessels drawing more than 8½ feet (2^m5) of water on account of two small rocks, with 9 feet (2^m7) of water on them, lying 30 or 40 yards (27^m4 or 36^m6) westward of the entrance. 20 25

Northeast Passage.—This is the name given to the channel extending from French River to One Tree Island, northward of Bustard Islands, Gull Rocks, and Frances Smith Shoal, and through which, with the assistance of buoys and beacons it was possible, in 1886, to carry 4 fathoms (7^m3) of water. It is not intended that the description given of its principal dangers and directions for avoiding them should, in the present unbuoyed state of the channel, induce a stranger to attempt it. The directions are, first, for the purposes of assisting in the possible placing of such aids at a future day, and, secondly, to add to the local knowledge of the few men who use this passage at the present time. The distance from Byng Inlet to French River by this passage is 4 miles shorter than that south of Bustard Islands. 30 35

***French River.**—This river, which is the outlet of Lake Nipissing enters the north shore of Georgian Bay by five mouths, each of which is briefly described in these pages. **Eastern Outlet** branch, also known locally as **Bass Creek**, 1½ miles eastward of the Main Outlet at French River Harbour, has a large group of islands at the mouth. The outlet is quite narrow and this branch is navigable only for canoes. About one mile up there is a portage and tramway to an expansion of the stream known as **Bass Lake** where a summer camp, **Rainbow Lodge**, is situated. It connects with the main outlet of French River at a point about 3 miles inland, at the junction of two channels, the eastern one of which is locally called **Canoe Channel** and both leading out of **Lake Wanapitei** to which, also the **Wanapitei River** is tributary. **French River Lodge** is located on an expansion of French River known as **Ox Bay**. 40 45 50

*See plan on chart 2285.

Chart 2285.

This extensive region lying between Georgian Bay and Lake Nipissing and made up of innumerable streams and lakes dotted with islands is known as the French River district.

- 5 **Main Outlet**, where is located French River wharf and village, enters at Bluff Point well inside of Graburn, Herschel, and Sabine Islands.

French River bungalow camp is a resort at the railway crossing of the Canadian Pacific Railway on the French River about 22 miles from the mouth. It is 60 miles north by rail from Parry Sound, and 45 miles south from Sudbury.

- 10 **Northwest Bank**, with from 5 to 10 feet (1^m5 to 3^m0) of water over it, is the name given to a dangerous and shallow rocky ledge extending in a general southwesterly direction one mile from Turnaway Rock (*see* below). The fairway northeast range of the Bustard Rock lighthouses in one, leads 200 yards (182^m9) southeastward of the bank.

- 15 **McLean Shoal** (*Lat.* $45^\circ 55' N.$, *Long.* $80^\circ 55' W.$), with 9 feet (2^m7) of water over it, is situated $2\frac{1}{4}$ miles northeastward from Bustard Rocks lighthouses, and is only 100 yards (91^m4) eastward of the intersection of the river and northeast lighthouse ranges.

- 20 **Buoy**.—A red spar buoy, moored in 6 fathoms (11^m0), on the western side of McLean Shoal, marks the turn from the line of Bustard Islands leading lights to that of French River lights.

- 25 **Seymour Rock**, 3 feet (0^m9) high, lies on the southeast side of the channel, into French River, and a third of a mile northeastward from McLean Shoal. A reef, with 8 feet (2^m4) of water over it, extends 270 yards (249^m8) southwest, and a rock, with 4 feet (1^m2) on it, lies 150 yards (137^m2) northward from Seymour Rock.

- 30 **Turnaway Rock**, 4 feet (1^m2) high and bare, is the name given to the southwest end of a ledge extending from Depot Island (*see* below), in a southwesterly direction one-half a mile, and lies one-third of a mile westward from Seymour Rock; the fairway range of the two French River leading lights in one, leads 150 yards (137^m2) southeastward of this ledge.

- 35 **Graburn Island** is small and lies about 450 yards (411^m5) eastward from Borron Rock; **Herschel Island** is the largest of a small group one-half a mile northward from Graburn; **Sabine** is the principal island just south of Bluff Point, the east entrance point to French River main outlet.

- 40 **Borron Rock**, 3 feet (0^m9) high, is situated a quarter of a mile northeastward from Seymour Rock, being connected therewith by a bank on which there is less than 3 fathoms (5^m5). Shoal water extends northeastward 300 yards (274^m3) where the depth is 12 feet (3^m7). A rock, 2 feet (0^m6) high, lies 100 yards (91^m4) southeast from the south point of Borron Rock.

- 45 **Depot Island**, 8 feet (2^m4) high and at the southern termination of the continuous west side of French River, is about 200 yards (182^m9) long and quite narrow. It has deep water close to its channel side. From this island, the northwest shore of French River runs northeastward nearly a mile to the lighthouse on Lefroy Island, and is steep-to.

Chart 2285.

Cherokee Rock is a small rock, just showing above the water, and situated northeastward distant a third of a mile from the highest part of Depot Island. There is a patch, with 12 feet (3^m7) on it, situated 350 yards (320^m6) southwest of Cherokee Rock, one, with 3 feet (0^m9) of water over it, lying 200 yards (182^m9) southward, and another with 6 feet (1^m8) on it, lying 200 yards (182^m9) north-eastward from Cherokee Rock. 5

Lights.—Lefroy Island.—This lighthouse stands close to the southeast side of the island of that name. It is a small framework structure painted white, surmounted by a red lantern, showing from a height of 15 feet (4^m6), a *fixed white* light visible 6 (5 nautical) miles. 10

Creek.—This lighthouse is a similar structure erected on the east shore of the Creek; it is painted white and exhibits from a height of 37 feet (11^m3), a *fixed white* light, visible in the line of the range 6 (5 nautical) miles. These two lights in one, bearing 026°, in conjunction with Bustard Rocks northeast range, lead into the river. 15

Middle Reef lies with its north end 120 yards (108^m1) eastward from Lefroy Island lighthouse. Shoal water extends from this stone 200 yards (182^m9) in a southwesterly direction, reducing the channel between it and the lighthouse to a width of 80 yards (73^m2). A small rock, however, with 10 feet (3^m0) on it (in low stages there may be 6 feet (1^m8) less), lies about 40 feet (12^m2) eastward from Lefroy Island lighthouse. 20

Buoys.—A red spar buoy marks the southwest extremity of Middle Reef. A black spar buoy is moored on the western side of the channel, opposite Lefroy Island light to mark the above mentioned rock. 25

The best channel is southeast of Middle Reef, and between it and the bank from **Sabine Island**, but in the absence of buoys requires great care in a deep draught vessel as the passage is only 100 yards (91^m4) wide.

Bluff Point, about 20 feet (6^m1) high, forms the east entrance point of the river, and 50 yards (45^m7) off it lies a round rock, 8 feet (2^m4) high, called **Loaf Rock**, whence shoal water extends westward 100 yards (91^m4). From Bluff Point, the east shore of the river runs nearly straight for half a mile to the mouth of The Creek, where will be found a depth of 10 feet (3^m0) of water, gradually shoaling to the head. 30

From Lefroy Island, the cliffy coast, from 20 to 30 feet (6^m1 to 9^m1) high, runs nearly straight two-thirds of a mile to **Brock Island**, which is separated from the west shore by a narrow boat passage. This island is narrow and 150 yards (137^m2) long, and 100 yards (91^m4) southwestward of it, there is a rock about 30 yards (27^m4) from the west shore with 3 feet (0^m9) of water over it, while 100 yards (91^m4) northeastward of the island and rather nearer the west than the east side of the river there is a rock, with only one foot (0^m3) of water over it, which should be carefully avoided by keeping the east shore on board. 40

Green Island, 4 feet (1^m2) high, is the name given to the northeasternmost of four small islets situated one-third of a mile from Brock Island. The channel is narrowed still more by a rock with 9 feet (2^m7) of water on it, lying 50 yards (45^m7) eastward of these islets. The channel between this rock and the eastern bank of the river is only 70 yards (64^m0) wide. If this obstruction is not buoyed, the eastern shore should be kept close on board. A dry rock, and one awash, lie nearly 150 yards (137^m2) southwestward of the largest and southwestern island of the group, and 50 yards (45^m7) from the west steep bank of the river which is here 35 feet (10^m7) high. 45 50

Chart 2285.

On the east side of the River, about one-third of a mile above Green Island, and about $1\frac{1}{2}$ miles from Lefroy Island lighthouse, is a rather deep indentation called **Loading Cove**. The public wharf which some years ago was situated
 5 just north of this cove, does not now exist. About one-third of a mile northward of Loading Cove the river widens out, the northwest corner taking the name of **MacDougal Bay**, and the banks of the river to the northeast rapidly converge to the falls and prevent any further navigation for craft other than canoes. A motor road connects the district with Canadian National and Canadian Pacific
 10 Railways some 15 miles up French River, and with the various resorts of the French River district.

Directions for French River.—If from North Channel of Lake Huron, pass half a mile southward of Grondine Rock (*Lat. $45^{\circ} 54' N.$, Long. $81^{\circ} 09' W.$*), (see page 248) whence steer 097° , which course should lead $1\frac{1}{4}$ miles southward of
 15 Emery Reef and half a mile south of Isabel Rock (page 246). Proceed on this course until the main lighthouse comes in line with the southwest lighthouse, bearing 074° . The latter mark, constituting southwest range, leads northwestward of Perley Rock and all the shoals off Bustard Rocks, and to within 200 yards (182^m9) of the lighthouse.

20 Keep a quarter of a mile northwest of the rocks, until abreast of Castle Island, when bring the Bustard Rocks northeast range lighthouses in line astern, bearing 219° , and proceed with them so far $1\frac{3}{4}$ miles from Castle Island, when the river lights should be seen in one bearing 026° . After keeping the latter in line for $1\frac{1}{2}$ miles, the black spar buoy off Lefroy Island light should be left to
 25 port, to avoid the 10-foot (3^m0) rock mentioned above, or a vessel may pass between Middle Reef and Sabine Island (see page 243) and mid-channel kept until destination is arrived at. By following these directions, a depth of not less than 24 feet (7^m3) was found in 1886 (in low stages there may be 6 feet (1^m8) less).

30 **Anchorage.**—A vessel may anchor, in from 4 to 7 fathoms (7^m3 to 12^m8), mud bottom, under the northwest shore anywhere northeastward of Depot Island.

Chart 2201.

From the southeast keep not less than one mile from Southwest Rock, until the north point of Ridout Islands opens northwestward of **Castle Island**
 35 **Rocks**, bearing 065° , when a vessel may haul northeastward and proceed as before directed.

From Owen Channel.—After entering Georgian Bay by the directions given on page 82, steer to pass half a mile northwestward of Wall Island, whence an 058° course for 40 (35 nautical) miles will bring a vessel to within one mile of
 40 Southwest Rock of Bustard Islands. From the northwestern part of Lake Huron, this is, in clear weather and daylight, for vessels of not too heavy a draught, a good route to French River, leading $4\frac{1}{2}$ miles northwestward of Northeast Shingle, and 6 miles in the same direction from Dawson Rock, with the benefit of smoother water in the prevailing southwest winds.

45 **From Cape Hurd Channel.**—When making the entrance to Georgian Bay in daylight and fine weather, the master of a vessel, if acquainted with the locality, will find Cape Hurd Channel the most direct route to French River from the southern ports of Lake Huron. Having entered Georgian Bay by the directions given on page 71, an 035° course from a position half a mile southeast-
 50 ward of the northeast extreme of Bears Rump for $47\frac{1}{2}$ ($41\frac{1}{2}$ nautical) miles should

Chart 2201.

bring a vessel to the line of the Bustard Rocks southwest leading lights and 2 miles distant therefrom, passing one mile southeastward of Halfmoon Island South Ledge (*see* page 85), and two-thirds of a mile southeastward from Dawson Rock (*see* page 86).

5

Caution.—This course from Bears Rump Island is not recommended in thick weather, on account of the close proximity of Halfmoon Ledges and Dawson Rock, in which circumstance a more easterly course until past the latter should be steered. If the weather is thick, when approaching the Bustards, proceed very slowly after getting 12 fathoms (21^m9) and stop immediately at 10 fathoms (18^m3) until land is recognized.

10

Chart 2285.

Directions for Northeast Passage from French River.—Steering for the Bustard Rocks lighthouses in one, 219°, alter the course for the north extremity of Bustard Islands when it touches the south point of Dead Islands, bearing 105°; steer for it thus, passing close to the north point and from 50 to 100 yards (45^m7 to 91^m4) off the north coast of the Bustards. Leaving these islands, steer to pass from 100 to 150 yards (91^m4 to 137^m2) northward of Black Rock. Thence steer 108° for half a mile to pass north of Bagot Rock, with 11 feet (3^m4) of water, marked by a buoy; after passing the latter, steer 156° the same distance, when a vessel should be about a third of a mile northeast of Southeast Rock; and, heading for One Tree Island, should have the elm tree on it right ahead, and Black Rock right astern and about its own breadth open north of Bustard Islands.

15

20

With the objects in this position, a vessel should steer 126° for One Tree Island, 2 miles, passing between Frances Smith Shoal and Murray (Cherry Island) Rocks, with not less than 4 fathoms (7^m3) of water, until the high southeast Murray Rock bears 058°. The vessel's head should then be turned southward to pass out between Frances Smith Shoal and the reef from Solitary Rock, steering 178°, until rather more than one mile outside of Solitary Rock, when the shoal water will be passed and a vessel may haul southeastward.

25

30

A buoy should be placed on the southwest extremity of the bank from Solitary Rock, and brought to bear 178°, before turning off the One Tree Island and Black Rock range; a course to pass close west of it will lead also eastward of Dingy Rock, on which, as before stated, there is 11 feet (3^m4). After passing the reef from Solitary Rock, two patches will be passed over, the northernmost of which named **Cross Ledge**, at one-third of a mile, has 15 feet (4^m6) least water on it, and the other at a little under one mile, 21 feet (6^m4). From the southern patch, a course of 141°, for 8 (7 nautical) miles, will bring a vessel to the line of the Byng Inlet leading lights (*see* page 230.)

35

40

French River to Grondine Point.—Caution.—Owing to the dark colour of the water in this neighbourhood, coupled with the uneven character of the bottom, shoal spots may be missed after the most carefully executed survey by the ordinary methods; great care is therefore especially necessary when navigating in the vicinity of French River.

45

Sand Bay is the indentation 1½ miles long and less than a quarter of a mile in width, immediately west of the narrow mainland point at Depot Island, west entrance point to French River wharves.

Chart 2285.

Everard Reef, 2 feet (0^m6) high, lies northward, 1½ miles from Bustard Rocks lighthouse; nearly half a mile southwest of it there is a patch with 10 feet (3^m0) of water on it, while at 300 yards (274^m3) distance on the same bearing, 5 there is less than 6 feet (1^m8). Shoal water extends over a mile southwestward from Everard Rock in patches, but on none has there been found less than 3 fathoms (5^m5) of water.

Mary Grant Rock, with 2 feet (0^m6) of water on it, lies southward half a mile from Bad River Point, and a patch, with 13 feet (4^m0) on it, is situated 10 in the same direction and distant from the point three-quarters of a mile.

Bad River Channel.—This is the third or middle one of the five mouths by which French River empties into Georgian Bay and is distant 3 miles westward, along the coast, from Main outlet. Tugs have gone some distance up this river for lumbering purposes. Three miles upstream, it widens somewhat and comes 15 under the name of **Western Channel, French River.**

On an island at the junction of Bad River and Fort Channels is Bad River resort camp.

There are several rapids in Bad River, those near the mouth being known as **Flar Rapids** and others farther up as **Herring Chutes**. One of the minor 20 passages into the mouth is called the **Devils Door**.

Bad River Point (*Lat. 45° 55' N., Long. 80° 59' W.*), is situated at the mouth of the river, and although called a point, because it appears as such from the direction of the mouth of French River proper, it is in reality only one of the innumerable islets which compose the coastline of the whole of this shore. Being 25 bare and about 12 feet (3^m7) high, it is rather more conspicuous than the rest of the adjacent coast. From it, the broken up coast trends in a general northeasterly direction 3¾ miles to Depot Island, the west entrance point to French River proper and northwesterly, 2½ miles to the entrance of Fort Channel.

Temple Rocks are a group lying a little more than one mile westward of 30 Bad River Point. The highest is 4 feet (1^m2) high, and the outer rock is two-thirds of a mile from the general shoreline. From this outer rock, the shallow bank continues in a southerly direction, ending in Emery Reef.

Emery Reef, a dangerous obstruction, with only 5 feet (1^m5) of water upon it, lies southwestward 1½ miles from Bad River Point, and northwestward 3¼ 35 miles from Bustard Rocks lighthouses.

Isabel Rock, with 14 feet (4^m3) of water over it, is situated a little over two-thirds of a mile southward of Emery Reef, and 270°, distant 3¾ miles, from the same lighthouses; care should be taken to avoid this patch in a large draught vessel and heavy sea.

Maitland Bank is a dangerous shoal, extending in a southwesterly direction 40 from the coast immediately eastward of Fort Channel, with depths on it varying from 12 feet (3^m7) to a few inches. At the distance of one mile from the shore, the bank breaks up into a number of shoals terminating in **Pring Reef** with only 9 feet (2^m7) of water over it, which is situated 1½ miles southeastward from White 45 Rock, and bears 090°, distant 3¾ miles, from Grondine Rock and 289°, distant 2½ miles from Isabel Rock. Between this and the main body of Maitland Bank, the shoals have depths on them varying from 14 to 18 feet (4^m3 to 5^m5).

Chart 2285.

Black Bay, nearly 3 miles west of Bad River entrance, receives the next outlet, Fort Channel, of the French River. Black Bay resort camp is on one of the islands in the upper part of Black Bay or Fort Channel.

Fort Channel is the name given to the fourth mouth of French River, nearly $1\frac{3}{4}$ miles eastward of White Rock, and joins Voyageur Channel at about $1\frac{1}{2}$ miles from the entrance. It is reported that there still exists in the locality the remains of a fort, from which the passing brigades used to be attacked in the early days, and from which circumstances this mouth takes its name. The surveying steamer *Bayfield* anchored, for the convenience of carrying on the work, in Fort Channel, about three-quarters of a mile below its junction with Voyageur Channel, but the entrance from Georgian Bay is so blocked with rocks of a pinnacly nature that the master of a vessel should not think of attempting it.

Voyageur Channel.—To the eastward of Indian Bight, and flowing out southwestward from its junction with Fort Channel and northward of a large island that forms the west side of Black Bay, is situated the entrance to the western mouth of French River. Six feet (1^m8) of water was carried up this river, for a distance of $3\frac{1}{2}$ miles in 1886. This particular outlet has been named Voyageur Channel, as it was by this route that the canoes in the early days are said to have entered Georgian Bay from Lake Nipissing on their way westward. The whole of this bight is full of dangerous ledges, and should be carefully avoided by vessels in thick weather, by not standing into less than 10 fathoms (18^m3).

White Rock, 9 feet (2^m7) high, is situated $4\frac{1}{4}$ miles westward from Bad River Point, 3 miles eastward of Grondine Point, and southward a quarter of a mile from **Eagle Nest Point**. It is really composed of five small, bare rocks, of which is of dark colour in contrast to the highest, which is lighter in colour than the coast adjacent. Standing well offshore, its light colour renders it a conspicuous object on a coast, where there are few characteristics. The shore between Grondine Point and White Rock is broken up into innumerable small islands, and is called Indian Bight, on account of the neat little village of Indians situated on the west side of an indentation about 2 miles northeastward from Grondine Point. The best way to communicate with this village is by Collins Inlet.

White Rock Ledge extends from White Rock southwestward over three-quarters of a mile, terminating in a couple of rocks, a few inches above the water.

CHAPTER IX

GRONDINE POINT and CAPE SMITH TO CLAPPERTON and McBEAN CHANNELS

DATUM.—See page 1.

5 *Chart 2286.*

Grondine Point is low, flat and shelving. It is situated $22\frac{3}{4}$ miles north-eastward from Cape Smith (*see* page 266). Shoal water extends from it three-quarters of a mile in the direction of Grondine Rock (*see below*), leaving a space of about a third of a mile, through which small craft occasionally pass, by keeping
10 close north of Grondine Rock. Extensive and dangerous shoals lie east and south-east from Grondine Point, the shallowest being Finnis Rock.

Finnis Rock, awash, is situated two-thirds of a mile southeastward from the point, and a rock, with 4 feet (1^m2) of water on it, lies a quarter of a mile south-westerly from Finnis Rock.

15 **Grondine Rock** (*Lat.* $45^{\circ} 54' N.$, *Long.* $81^{\circ} 09' W.$), 5 feet (1^m5) high, and 50 yards (45^m7) in diameter, is situated a mile southward from the point of this name; it bears also 094° , distant $8\frac{2}{3}$ ($7\frac{1}{2}$ nautical) miles, from the north point of Green Island (*see* page 251). Many shoal patches lie near it, but none with less
20 than 15 feet (4^m3) of water over them (in low stages there may be 6 feet (1^m8) less) were found with the two following exceptions:—

Simpson Rock with 9 feet (2^m7) of water, and a shoal with 12 feet, (3^m7) lie southeast one-third of a mile, and northwest 250 yards (228^m5), respectively, from Grondine Rock.

Draper Island, 8 feet (2^m4) high, is situated close to shore, three-quarters of
25 a mile westward of Grondine Point, and a reef extends from the island southward a quarter of a mile.

Hen Island, 8 feet (2^m4) high, lies a third of a mile offshore and $1\frac{3}{4}$ miles westward from Grondine Point, and from it shallow water extends two-thirds of a mile in a southerly direction.

30 **Popham Point** is situated nearly 3 miles westward from Grondine Point, the space between the former and Hen Island being occupied with a group of small dry rocks named **The Chickens**, extending off three-quarters of a mile. From the southwestern dry stone, a shallow bank extends three-quarters of a mile; and, southward, as well as southwestward from this bank, lie several patches
35 with 3 to $3\frac{1}{2}$ fathoms (5^m5 to 6^m4) on them, which deep draught vessels should keep outside of, in a heavy sea.

Collins Inlet.—**Eastern Entrance.**—Collins Inlet is the name given to the water separating **Philip Edward Island** from the mainland, the island being about 12 ($10\frac{1}{2}$ nautical) miles long and 3 ($2\frac{2}{3}$ nautical) miles in greatest

Chart 2286.

breadth. The western entrance is the deeper and that generally used. The distance between the two entrances in an air line is about 10 ($8\frac{3}{4}$ nautical) miles. The surveying steamer *Bayfield* carried in 14 feet (4^m3) to the anchorage, northeast of Toad Island, by Eastern Entrance (in low stages there may be 6 feet (1^m8) less). 5

Moreland Bank, with 3 fathoms (5^m5) of water on it, is the outer shoal in the approach to Eastern Entrance, lying $2\frac{1}{3}$ miles southwest of Toad Island (*see* below) and three-quarters of a mile southeast of the leading line.

Beaverstone Bay, with a length of $4\frac{1}{2}$ miles and an extreme width of about 10 2 miles, has over eighty islands, large and small, scattered about its waters. **Beaverstone River** enters the bay on its eastern side 4 miles above Toad Island. There is a church situated near the mouth. 15

At the head of Beaverstone Bay, Collins Inlet narrows to a width of a few hundred yards and turns almost due west for $2\frac{1}{2}$ miles to an expansion, Mill Lake. At this point, and on the north side of the lake is the village of Collins Inlet, where were located the lumber mills. 15

Mill Lake extends southwestward into the heart of Philip Edward Island for $3\frac{1}{2}$ miles and an average width of one-half a mile. There are several large islands in it. The western portion of Collins Inlet opens out of the middle of the west side of Mill Lake. (*See* page 253). 20

McDonald Shoal, with $3\frac{1}{4}$ fathoms (5^m8), lies southwestward $1\frac{1}{2}$ miles from Toad Island, and a third of a mile on the southeast side of the leading line.

Toad Island, nearly a mile northwestward from Popham Point and a third of a mile in diameter, is, together with the smaller one close southeast of it, 25 conspicuous from the offing, and therefore serves to point out Eastern Entrance. A small bushy islet is just separated from the northeast extreme of Toad Island, and 200 yards (182^m9) from this bushy islet in a northeast direction lies a rock, with 7 feet (2^m1) of water on it, which should be carefully avoided when anchoring under the north side of Toad Island. A reef of dry and sunken rocks extends 30 three-quarters of a mile southwest from Toad Island.

North and South Rocks, about 5 feet (1^m5) high, both bare and of similar appearance, are situated one on each side of the channel north of Toad Island, and here will be found the shallowest part, with a depth in 1885 of 14 feet (4^m3) (*see* above); northeast of these two rocks, the water deepens suddenly to 8 35 fathoms (14^m6).

Square Rock, small, isolated and 4 feet (1^m2) high, lies $1\frac{1}{4}$ miles northeastward of Toad Island, and 250 yards (228^m5) northwestward of **Pine Tree Island**, small and wooded, with two conspicuous pines near its west end, which assist in picking up Square Rock from outside. 40

Midshipman Point the southeast extreme of Philip Edward Island, and three-quarters of a mile northeast of Toad Island, marks the limit of the survey in 1885.

Anchorage.—Southeast of the above point, a vessel will find good anchorage in 8 to 10 fathoms (14^m6 to 18^m3) over mud. 45

Hincks Island, a quarter of a mile in diameter, lies rather over that distance northwest of Toad Island, the channel being between them.

Chart 2286.

Brassey Island, 19 feet (5^m8) high, and small, is by reason of its bareness, a conspicuous object in making Eastern Entrance; it lies a mile westward from Toad Island, and there are boat channels between it and the chain of islets connecting
5 it with the shore. A rock, with less than 6 feet (1^m8), lies 150 yards (137^m2) from its southwest extremity.

Deer Island is the largest island inside of Brassey Island, and fills the eastern part of a bay whose outer points are Hincks and Hamilton Islands. This bay contains innumerable other smaller islands and rocks and has several lesser
10 indentations, that directly north from Deer Island being **Moose Bay** and the one in the northwest corner being **Bear Bay**. Its head is distant from Mill Lake of Collins Inlet only one-half mile. The largest island in the mouth of Bear Bay is named **Crume**.

Sly Boots, a rock with 3 feet (0^m9) of water over it, lies two-thirds of a mile
15 southwest of Brassey Island. A rock, with 14 feet (4^m3), lies a third of a mile southeastward, and another with 12 feet (3^m7), three-quarters of a mile southeastward, respectively, from Brassey Island.

Hamilton Island (*Lat. $45^{\circ} 57'$ N., Long. $81^{\circ} 16'$ W.*), 57 feet (17^m4) high, and situated $2\frac{1}{4}$ miles westward from Toad Island, is the name given to one of the
20 most conspicuous features in this vicinity; northwest of the line joining Hamilton Island to Smooth Rock, distant $3\frac{1}{4}$ miles southwestward, the survey was not taken. Hamilton Island is a quarter of a mile long east and west, by half that breadth, and dry rocks extend 300 yards (274^m3) from its southwest point, and from the outer of these dry rocks, a reef, with 9 feet (2^m7) of water on it, extends
25 a third of a mile in a southwesterly direction. From the same outer dry rock, a shoal with depth of 12 feet (3^m7) lies southward a quarter of a mile.

Bateman Island, three times the size of Hamilton Island, lies directly north of the latter, close to the main shore. There are numerous small rocks and islets between these two; west of them is a bay containing many similar islets.

The mainland shore, trending northwestward, from Hamilton Island for
30 about $7\frac{1}{4}$ miles to the western entrance of Collins Inlet has a number of small bays and minor inlets and is fronted with the islets and rocks, characteristic of this coast. **Solomon Bay**, narrow, and extending inland over a mile from the islands at its mouth, is $2\frac{1}{4}$ miles northwestward from Hamilton Island. It has
35 three large islands, and many smaller ones, at the mouth. The large eastern one is **Martel** and the western one, **Campbell Island**.

A mile and a half farther west is **Desjardins Bay** of about the same size as Solomon and with many small islands, both off the mouth and within it.

Directly west of Desjardins Bay, and lying between Fox Islands and the
40 shore, is a group a mile and a half in length and parallel to the coast. **Lowe Island** is one of the smaller ones at the eastern part of the group, a half mile west of the extreme eastern one which latter is the largest. **Le Haye Island** the largest western one lies over a mile due north of West Fox Island and three-quarters of a mile off the mouth of **Winakaching Bay**, a narrow inlet, having
45 its mouth 2 miles east of the western entrance to Collins Inlet. A group of islands lies close to the mouth of Winakaching Bay, which penetrates almost through to the waters of Collins Inlet.

Directions for Eastern Entrance.—From North Channel of Lake Huron, a vessel may pass northward of Scarecrow Island and between Green Island
50 and Smooth Rock, then, Scarecrow Island, kept astern open south of Smooth Rock the breadth of the latter, bearing 256° , for nearly 4 miles from Smooth Rock, will lead a vessel to a position 204° , distant one mile, from Brassey Island, and to

Chart 2286.

the line of the Eastern Entrance leading mark, viz., Square Rock midway between North Rock (page 249) and the rocks forming the west extreme of **Toad Island**, bearing 055°.

This mark should be steered for, the speed reduced, and the lead kept going; 5
pass midway between North and South Rocks, and, taking care to avoid the 7-foot (2^m1) rock northeast of Toad Island, a vessel may anchor under its north side, or, in deeper water and with more room southeast from Midshipman Point.

(For Western entrance to the inlet, see page 253).

Green Island, so called on account of its trees, which are in marked contrast to the adjacent bare rocks and islands of Laurentian formation, is composed 10
of limestone, 10 feet (3^m0) high, and a third of a mile in diameter, and is situated 8 $\frac{3}{4}$ miles, 266°, from Grondine Point and 9 (7 $\frac{3}{4}$ nautical) miles, 114°, from the southeast entrance of Killarney Harbour. It may be said to mark the northern limit of the deeper water in this locality. It is about 3 $\frac{1}{2}$ miles from the coast of 15
Philip Edward Island, and nearly 6 $\frac{1}{2}$ miles (in an air line) from Western Entrance of Collins Inlet. Shoal water extends from the southwest and west sides of the island a distance of 300 to 400 yards (274^m3 to 365^m8); the remainder of the island may be approached to 200 yards (182^m9).

Steele Rock, with 11 feet (3^m4) of water on it, is a small spot situated westward three-quarters of a mile from the west point of Green Island, and between 20
them is a depth of 10 to 11 fathoms (18^m3 to 20^m1).

Single Rock is a solitary rock 4 feet (1^m2) high, lying one and a quarter miles westward from the west point of Green Island, and it may be approached 25
on all sides to a distance of 50 yards (45^m7).

Scarecrow Island, wooded and 6 feet (1^m8) high, lying 2 miles west from Green Island, and 124°, distant 7 (6 $\frac{1}{4}$ nautical) miles, from Killarney east light-house, is 200 yards (182^m9) in greatest length, and composed of limestone gravel. Its north side may be approached to 150 yards (137^m2), but on its other side 30
shoal water stretches off under the name of Scarecrow Island Bank.

Scarecrow Island Bank extends from the island a quarter of a mile in a southeast direction, southwestward half a mile and westward one-quarter of a mile.

Clearing marks.—Red Rock in line with Killarney Peak, bearing 332°, leads 35
400 yards (365^m8) southwest; Red Rock in line with the second and lower gap westward of Leading Mark Hill, bearing 317°, leads 300 yards (274^m3) northeast of the bank.

Smooth Rock is the southernmost of the rocks of Laurentian formation, and derives its name from its almost polished surface; it is 18 feet (5^m5) high, and lies a quarter of a mile northward from the north gravelly point of Green 40
Island. A rock, with 4 feet (1^m2) of water on it, lies a quarter of a mile northeastward from the north gravelly point of Green Island. A rock, with 4 feet (1^m2) of water on it, lies a quarter of a mile northeastward from Smooth Rock; otherwise the water is deep close to the rock on all sides.

The passage is good between Green Island and Smooth Rock, but no stranger 45
should attempt to pass through any of the channels between the islands north of Smooth Rock, as they were not surveyed. The present traffic along this part of the shore is not great, and it is doubtful whether the best chart and sailing directions would take a vessel through this group of islands and sunken rocks without local knowledge. Besides, the passage northward of Smooth Rock saves 50
very little distance in traversing this part of Georgian Bay.

Chart 2286.

Southwest Hawk Island is an island, 38 feet (11^m6) high, situated nearly a mile northwestward from Green Island. It is the southwesternmost of the group of islands north of Green Island, and which some of the fishermen call
 5 **Hawk Islands.** Southwest Hawk Island has a few trees on its summit and is steep-to on its west and southwest sides.

Le Haye Rock, small and awash, lies 1 $\frac{3}{4}$ miles northwest from Green Island; the water is deep close up to its south and west sides.

The Triangle is the name given to the three sunken rocks with 4, 7, and
 10 8 feet (1^m2, 2^m1 and 2^m4) of water over them. The southwestern rock of the three, with 7 feet (2^m1) of water on it, lies with the east end of **Papoose Island** bearing 163° open westward of Scarecrow Island the breadth of the latter distant 1 $\frac{7}{8}$ miles.

West Fox Island is the most westerly of the group of **Fox Islands** situated
 15 2 miles northwestward of Hawk Islands. It is 80 feet (24^m4) in height, fairly wooded, and a quarter of a mile long north south; dry rocks lie a quarter of a mile from its south and southwest sides. West Fox Island lies 3 miles northwestward from Green Island.

Nicholson Rock, with 5 feet (1^m5) of water upon it, lies half a mile south-
 20 westward from this island, and two-thirds of a mile northeastward of The Triangle.

The Brothers are two small rocks, 5 feet (1^m5) in height, situated three-quarters of a mile westward from West Fox Island, and 2 miles eastward from Red Rock.

Harty Patches are two small rocks, with 6 feet (1^m8) and 13 feet (4^m0) of
 25 water on them, lying half a mile westward of The Brothers, the northeast and shoaler one being 1 $\frac{2}{3}$ miles eastward from Red Rock.

Red Rock is the name given to a small, bare islet of that colour, situated 104°, distant nearly 3 $\frac{1}{4}$ miles, from Killarney east lighthouse; it is 11 feet (3^m4) in
 30 height, and by its isolation is conspicuous. It is also a good guide for Western Entrance to Collins Inlet. Two rocks, with 10 feet (3^m0) and 13 feet (4^m0) on them, lie, respectively, 150 and 250 yards (137^m2 and 228^m5) northwestward from Red Rock which is otherwise bold-to.

Alexander Rock (*Lat.* 45° 57' N., *Long.* 81° 25' W.), with 9 feet (2^m7) on it,
 35 lies a mile southeast from Red Rock.

Halkett Rock, with 5 feet (1^m5) over it, lies a little more than three-quarters of a mile 066° from Red Rock.

Caution.—To pass southwestward of all these dangers, a vessel should
 40 not proceed further eastward than to bring Red Rock in line with the second and lower gap westward of Leading Mark Hill, bearing 317°, which mark leads but 200 yards (182^m9) southwestward of Alexander Rock.

South Point is the western termination of the broken portion of Philip Edward Island, three-quarters of a mile eastward from One Tree Island. It forms the southeast entrance point of the inlet, which is here one-third of a mile
 45 wide with a depth of 8 fathoms (14^m6) over mud. The northwest extreme of a reef, with 3 feet (0^m9) of water on it, lies westward a quarter of a mile from South Point, and a rock, with 9 feet (2^m7) of water on it, lies on the north side of the passage a quarter of a mile northwest from the same.

Chart 2286.

Western Entrance to Collins Inlet.—Vessels of light draught can proceed through the inlet to Mill Lake and Collins Inlet village (*see* page 249). There are several islands within the inlet from one-half to two and a half miles from the entrance at South Point. The latter is situated $4\frac{1}{2}$ miles northeastward from the east entrance to Killarney, where a stranger bound to the inlet should engage a pilot. After being assisted in and out once, the master of a vessel should be able to reach the anchorage under South Point by the following description and directions:— 5

One Tree Island, 21 feet (6^m4) high, is situated 074° , and is distant $3\frac{1}{3}$ miles from Killarney east lighthouse, $1\frac{3}{4}$ miles north of Red Rock, and three-quarters of a mile from South Point, the southeast entrance point of the inlet. A ledge, with less than 6 feet (1^m8) of water on it, makes out 250 yards (228^m5) westward from One Tree Island, and a small rock, 3 feet (0^m9) high, lies 300 yards (274^m3) eastward from the same. Between this small rock and South Point are several shoal spots with deep water between them, rendering the passage between One Tree Island and South Point impracticable for a stranger. A wooden post, remaining from a former beacon, still stands on the island (1950). 10 15

A rock, with one foot (0^m3) of water on it, lies a quarter of a mile northward from One Tree Island and north of the channel; two other rocks, with 6 feet (1^m8) and 5 feet (1^m5) of water on them, lie northeastward 300 yards (274^m3), and a quarter of a mile, respectively, for the same. 20

Buoys.—A red spar buoy is moored southwestward of the first rock referred to above; a black spar is placed westward of the rock, with the depth of 6 feet (1^m8). 25

Flat Rock, 10 feet (3^m0) high, lies 300 yards (274^m3) northwesterly from One Tree Island, and between them is the narrow channel, through which from 5 to 6 fathoms (9^m1 to 11^m0) may be carried. Flat Rock is divided into three parts, its total length being 350 yards (320^m0); a single black stone, 2 feet (0^m6) high, lies 100 yards (91^m4) westward from it. Deep water will be found close to the south side of Flat Rock, with the exception of near the east extremity, where a shallow spur puts out into the channel about 50 yards (45^m7). 30

Light.—A *flashing white* light is shown, at a height of 16 feet (4^m9) from a steel structure, carrying a white daymark, on Flat Rock.

Buoy.—A black spar buoy is moored, in 24 feet (7^m3) of water, on the northwestern edge of the shoal surrounding One Tree Island. 35

Beacon.—A white beacon, 14 feet (4^m3) high, stands on the southeastern of two rock islands in Collins Inlet, $1\frac{1}{2}$ miles eastward of South Point.

Pinch Island, about 15 feet (4^m6) high, is situated 200 yards (182^m9) northeastward of Flat Rock, and between them there is no passage. A chain of islets and rocks connects this island with the north shore. 40

Mocking Bird Island, 23 feet (7^m0) in height, and somewhat resembling One Tree Island in appearance, is situated two-thirds of a mile southeast from the latter. From the north extremity, a reef extends in a northerly direction a quarter of a mile; the east and west sides of this treeless island are steep-to. 45

Celtic Rocks are situated 200 yards (182^m9) southwestward from Mocking Bird Island, and between them there is no passage. The southern rock of the two is 4 feet (1^m2) high, and from Red Rock bears 019° , distant three-quarters of a mile. The east and west sides of Celtic Rocks are steep-to, but 200 yards (182^m9) southward from the southernmost one there is a rock with 7 feet (2^m1) of water on it. 50

Chart 2286.

Pond Point is the first decided point northeastward of Killarney east lighthouse, being $1\frac{1}{4}$ miles distant therefrom. Between this point and Western Entrance to Collins Inlet, the shore is much broken up with a number of small
5 bays and islands, which offer good shelter for small boats, but, being very foul, should not be approached by a vessel nearer than the line joining Pond Point to One Tree Island.

Rannie Rocks, 2 feet (0^m6) high, lie a quarter of a mile northeastward from Pond Point, and are steep-to. One-third of a mile southwestward of Pond Point
10 is the entrance to an excellent little boat harbour. Between this cove and the east lighthouse, the shore is fairly straight, with a few small rocks lying close to it.

Directions for Western Entrance.—If from the southeast, steer for Scarecrow Island, until Red Rock comes in the second gap westward of Leading Mark Hill, bearing 317°; this will lead between Single Rock and the northeastern
15 part of Scarecrow Island Bank. If this leading mark is not easily distinguishable, proceed further west, keeping a mile southward of Scarecrow Island until Red Rock is in line with Killarney Peak (a sharp wooded mound at the back of Killarney), bearing 332°. Either leading marks kept on, will lead southwestward of all dangers between Green Island and Red Rock; the last mentioned
20 mark, will of course, give them the wider berth.

Pass 200 yards (182^m9) or more westward of Red Rock, and steer about 015° westward of One Tree Island, to bring the west end of Flat Rock in line with the eastern summit of a double topped eminence on the rear range, 955 feet (291^m1) in height known as **Gulch Hill**, bearing 004°; this mark will lead west of the
25 black spar buoy marking the northwestern end of the reef from One Tree Island. Keep the southeast side of Flat Rock on board, giving the east end of it a little berth, to clear the sunken rocky spur already alluded to (in ordinary weather the yellow water will show distinctly), and steer for the mouth of the inlet with the southeastern side of Flat Rock exactly under the highest part of Badgeley Island
30 astern, bearing 255°, which will lead between the buoys indicating the one-foot (0^m3) and 6-foot (1^m8) rocks (they are only 150 yards (137^m2) apart) previously described, and anchor north of South Point until assistance is obtained to proceed further.

Coast.—From the Western Entrance of Collins Inlet, the mainland shore
35 trends west for $2\frac{3}{4}$ miles and then southwestward for 2 miles to Red Rock Point lighthouse at the east entrance to Killarney Harbour. Along the first stretch of this shore, there are a number of small islands and rocks.

The **Chikanishing River**, a small stream, has its mouth in the north shore opposite South Point. An old road parallels the stream and one mile back joins
40 the road which leads from Killarney Harbour westward to a series of lakes, **George, Whiterock, Killarney, Kakakise, Carlyle, Brush Camp, Bell**, and others joined by trails and portages and giving access to the **Panache Lake** region north of Collins Inlet.

George Island is shaped like an equilateral triangle, the length of each of
45 the sides being about $1\frac{3}{4}$ miles, the northeast side forming the southwest shore of Killarney Harbour. The southeast coast of George Island from Northeast Point is steep-to.

Petley Rock (Lat. 45° 57' N., Long. 81° 32' W.), with one foot (0^m3) of water on it, lies 150 yards (137^m2) from the south extreme of George Island, and shoal
50 water continues from it 100 yards (91^m4) in a westerly direction. The shore here should receive a berth of one-third of a mile.

Chart 2286.

Sandy Cove is a snug little indentation at the southwest point of George Island; this point is surmounted on its northern side by a round bare hill 60 feet (18^m3) high.

Sandy Cove Ledge, 2 feet (0^m6) high, lies 250 yards (228^m5) from the mouth of the cove, whence it derives its name, and from it the water falls off deep westward and southward, but there is no passage between it and the shore. The west side of George Island to Fish Point, its northwest extremity, is ragged and fringed with a rocky bank, extending for an average distance of a quarter of a mile from shore. 5 10

George Rock, awash, lies nearly a mile northwest from Sandy Cove Ledge, being distant one-third of a mile from the nearest part of George Island.

Gull Roost, 11 feet (3^m4) high, is the highest of the granite rocks, which skirt this shore, and should not be approached within 200 yards (182^m9).

Fish Point is the northwest extremity of George Island, and is composed of two low, bare islets 5 feet (1^m5) high, between which and the main island, there is a boat passage. 15

On **Ann Long Bank** a depth of 7 feet (2^m1) will be found, nearly half a mile in a westerly direction from Fish Point, to lead west of which keep west light-house in line with the very highest part of **Leading Mark Hill**, bearing 036°. 20

Light-buoy.—A black light-buoy, showing a *flashing white* light, is moored about one cable westward of the northern end of this bank.

Note.—The channel past Killarney is to be treated as a through channel upstream from the east entrance.

Killarney Harbour is a narrow strait dividing George Island from the main shore, and affords excellent shelter from all winds, the depth in the channel being 19 feet (5^m8) (at low stages there may be 6 feet (1^m8) less). It contains a Roman Catholic church, hotel, and store where small supplies may be obtained. There is frequent steamer communication with Sault Ste. Marie, and the principal ports of Georgian Bay and North Channel of Lake Huron. (*see* plan chart 2286). 25 30

Channel.—**Buoys**.—The channel of approach to the wharves was dredged to a depth of 20½ feet (6^m2) in 1939; the north side is marked by red spar buoys.

Wharves.—At Killarney Harbour are several private wharves in good repair; these are the Jackman wharf with a berth 200 feet (61^m0) long and about 25 feet (7^m6) deep; the wharf of the Booth Fisheries with a berth 150 feet (45^m7) long and 18 feet (5^m5) deep; the wharf of the Globe Fisheries with a berth 100 feet (30^m5) long and 14 feet (4^m3) deep; the wharf of A. J. Lowe has a face 151 feet (46^m0) long and in 1939 the area in front of the wharf and approach were dredged to a depth of 20½ feet (6^m2). The Government wharf, 140 feet (42^m7) long, has a depth of 14 feet (4^m3) alongside. 35 40

Lights.—**Fog signal**.—A *flashing white* light is exhibited, at an elevation of 54 feet (16^m5), from a square, white tower on Red Rock Point. This light is known as Killarney East light.

A hand fog-horn replies to vessels signals.

Chart 2286.

A *fixed white* light is exhibited, at an elevation of 37 feet (11^m3), from a square, white tower on Partridge Island. This light is known as Killarney West light.

- 5 A *flashing white* light is exhibited, at an elevation of 23 feet (7^m0), from a lantern on a pole with a white diamond-shaped daymark, on a small island close westward of Le Hayes Point.

Coast.—The north shore of Killarney Harbour is indented by three coves, the easternmost of which runs in immediately westward of East lighthouse.

- 10 **Thebo Point** separates the latter from **Thebo Cove**, and this point, although low, is quite steep-to. **Flat Point** is the name given to the projection dividing Thebo from Cameron Cove, the western one of the three above mentioned. From Flat Point, shoal water extends 50 yards (45^m7). Cameron Cove has two islets in the west part of the entrance, from the western one of which, a shoal extends toward the channel 50 yards (45^m7).

- 15 **Northeast Point** lies three-eighths of a mile southwestward from East lighthouse and forms the southeastern entrance point of Killarney Harbour.

Pancake Rock, awash, lies 130 yards (113^m9) eastward of Northeast Point, and between them the passage is only fit for a boat.

- 20 **Jackman Rock**, with 8 feet (2^m4) of water over it, is situated 200 yards (182^m9) eastward from Entrance Rocks. Fish Point closed with the wharves on the north shore, the latter bearing 283°, leads northward of this obstruction.

Buoys.—A black light-buoy, showing a *flashing white* light, is moored north-eastward of Jackman Rock, and a black spar buoy is moored on the northwestern edge of the rock.

- 25 **Entrance Rocks**, 6 feet (1^m8) high, lie 150 yards (137^m2) northward of Northeast Point and are 100 yards (91^m4) in extent northwest and southeast. Not more than 8 feet (2^m4) of water can be carried between them and George Island, but they are steep-to on the north side.

- 30 **Bayfield Bluff** is a low cliff forming the southeast side of one of the coves situated half a mile from Northeast Point, and nearly opposite the southeastern wharf.

- 35 **Le Hayes Point** applies to the southwest extreme of the mainland and forms the north point of the entrance from the west. This point has a rock, 6 feet (1^m8) high, lying 40 yards (36^m6) off, together with a small, dry stone 100 yards (91^m4) west of it, the channel here being only 70 yards (64^m0) wide. Between Cameron Cove and Le Hayes Point the mainland shore is nearly straight north-westward and southeastward and fringed for nearly three-quarters of a mile with various wharves, at which good water will be found. The south shore of the harbour between Northeast and Fish Points, although straight on the whole, is
40 broken by several small coves.

- 45 **Directions.**—Approaching Killarney Harbour from the southeast, bring East lighthouse under the highest part of Leading Mark Hill, bearing 359°, at night the light on this bearing, and proceed for it thus to avoid Jackman Rock, until Fish Point is well closed with the wharves at the village, the latter bearing 283°, which mark will lead northward of the same. After passing Entrance Rocks, which can generally be made out on a dark night, keep the

Chart 2286.

George Island shore on board to avoid a shallow rock lying 50 yards (45^m7) off a point on the north side of the harbour immediately opposite to Bayfield Bluff. A depth of 4 fathoms (7^m3) may be carried in by this entrance.

Coast.—From Le Hayes Point the mainland shore trends in a general northerly direction a little over one mile. **Lobster Island**, (Lat. 45° 59' N., Long. 81° 31' W.), about 80 yards (73^m2) in diameter and the same distance from the shore, lies northward two-thirds of a mile from Le Hayes Point; a depth of 12 feet (3^m7) will be found 250 yards (228^m5) westward from Lobster Island. The soundings on this shore are shallow, but as the water shoals very gradually, and the bottom is soft, sailing vessels in beating may stand in to very little more than their draught with confidence. 5 10

Sheep Island, over one-third of a mile long and one-quarter of a mile in width, is the next northeastward of that on which West lighthouse stands, and a small rock, 3 feet (0^m9) high, lies 100 yards (91^m4) off its southern extremity. 15

Partridge Island on the south point of which is situated Killarney West lighthouse, is 150 yards (137^m2) long north and south, by 150 yards (137^m2) wide. A rock, just showing, lies 150 yards (137^m2) south, a rock, 2 feet (0^m6) high, the same distance southwest, and a dry stone 170 yards (155^m4) westward from the lighthouse. An islet lies 300 yards (274^m3) westward from the lighthouse, and northwestward 100 yards (91^m4) from this islet is a small rock, with 3 feet (0^m9) of water on it. 20

Killarney Bay.—The bay north of the West lighthouse and, in fact, the inside waters north of George and Badgeley Islands from Lansdowne Channel is known as Killarney Bay. **Pine Island** is the largest in the northern part of the bay. 25

No vessel should proceed north of the line running east and west through West lighthouse, as the survey was not carried northward of this line.

Double Island is an island 17 feet (5^m2) high, of this dual nature, lying a third of a mile southwest of West lighthouse, and a small islet, 3 feet (0^m9) high, lies easterly 300 yards (274^m3) from the southeastern Double Island. There is no passage between Double Island and the lighthouse, and shallow water extends 200 yards (182^m9) in an easterly direction from the former. 30

Double Island Ledges are a dangerous patch of rocks, one of which just shows, lying nearly three-quarters of a mile southwestward of Double Island; the southwest extremity, where there is a depth of 14 feet (4^m3), bears from Fish Point 271°, distant three-quarters of a mile. 35

Clearing mark.—West lighthouse under the highest part of Leading Mark Hill, bearing 036°, leads southeast of these ledges.

Directions.—Proceeding to Killarney from North Channel of Lake Huron, the most direct track is between Kokanongwi and Badgeley Islands; West lighthouse should be steered for in line with the highest part of Leading Mark Hill on the above bearing, to lead southeast of Double Island Ledges, and northwestward of Linter Rock and Ann Long Bank. By day, when abreast the light-buoy marking the edge of this bank, alter course eastward, bringing Badgeley Rocks in line with Lions Rump, bearing 260°. Run with the latter mark astern, until the northeast part of George Island is touching or slightly closed with 40 45

Chart 2286.

Le Hayes Point, bearing 109° . This will bring a vessel to the entrance of the dredged cut, marked on the north side by red spar buoys. The most water that a vessel can carry into Killarney by the western entrance is $20\frac{1}{2}$ feet (6^m2) (at 5 low stages there may be 6 feet (1^m8) less).

At night.—On the darkest night, the black outline of Leading Mark Hill is discernible with the aid of a glass, and the hill and West lighthouse should be kept in line as previously directed, until East lighthouse has passed across northward of Le Hayes Point, when a vessel may haul up for the entrance. A vessel should not haul up too soon, remembering that she would have to be within 200 yards (182^m9) of Double Island before she could get ashore, and moreover a sheer to starboard would soon put her into deeper water. A stranger should not attempt either of the entrances of Killarney by night, until he has had some experience by day.

Badgeley Rocks, 10 feet (3^m0) high, lie a little more than half a mile northeastward from **Maxwell Point**, the northeast extreme of Badgeley Island. Between Maxwell Point and Badgeley Rocks are two sunken dangers, with 5 feet (1^m5) of water on them; there is, however, deep water between these obstructions, and between the southern shoal and Badgeley Island. The Killarney Quarries leading lights (*see* page 260) lead through the latter passage.

Buoys.—A red light-buoy, showing a *flashing red* light, marks the southern of these two shoals, and is known as Killarney Quarries light-buoy. A red spar buoy marks the southern extreme of the shoal water surrounding Badgeley Rocks.

Badgeley Island has a total length of $3\frac{2}{3}$ miles with a maximum breadth of $1\frac{1}{2}$ miles; the highest part is situated nearly a mile from its northeast extreme, and attains an elevation of 370 feet (112^m8). The southeast coast of Badgeley Island as far as High Beach is steep-to.

Twin Islands, 31 feet (9^m4) high, consist of two high bare rocks, situated a quarter of a mile southeastward of Maxwell Point. A depth of 3 fathoms (5^m5) may be carried through between Twin Islands and Badgeley Island, and deep water will be found on their north, east, and south sides.

Linter Rock, with 14 feet (4^m3) least water on it, lies southward two-thirds of a mile from the southern Twin Island, and northward a little more than that distance from the north part of Kokanongwi Island. The West lighthouse and Leading Mark Hill range previously alluded to, leads northwestward of this rock.

Buoy.—A black spar buoy is moored off the northwestern side of Linter Rock.

Kokanongwi Island is two-thirds of a mile long northeast and southwest, and nearly a quarter of a mile broad. It lies a little over three-quarters of a mile southeastward from the middle of the southeast side of Badgeley Island. Shoal water extends 300 yards (274^m3) south, and west, from its southwest point, leaving its northwest and north sides steep-to. A large rocky flat extends from the southeast side one-third of a mile, almost joining the shoal water from Kokanongwi Shingle.

Chart 2286.

Kokanongwi Shingle is a bank of stones, 5 feet (1^m5) high, situated two-thirds of a mile eastward from the island of that name. A shallow spit extends from it in a northeast direction 200 yards (182^m9) and a bank runs from it southwesterly a quarter of a mile, leaving a channel 200 yards (182^m9) wide between it and the bank from Kokanongwi Island. The summit of Cape Smith in line with Kokanongwi Shingle, bearing 190°, make a good lead toward the western entrance to Killarney Harbour. 5

Evans Point (Lat. 45° 55' N., Long. 81° 37' W.) is the southwestern extremity of Badgeley Island, and off it shoal water extends 200 yards (182^m9). Lions Head Hill, in line with Underhill Point (*see below*), bearing 010°, leads 75 yards (68^m6) westward of the shoal water. 10

High Beach Cove is situated between Evans Point and **High Beach**, a conspicuous white point a little over a half mile eastward of Evans Point.

Leading lights.—Fog signal.—Two *fixed white* leading lights are exhibited at High Beach, Badgeley Island. The front light is exhibited at an elevation of 39 feet (11^m9), from the roof of a white, square building, and the rear light, at an elevation of 61 feet (18^m6), from a brown skeleton tower surmounted by a white watchroom, about a third of a mile, 074°. from the front light. These lights in line, bearing 074°, lead southward of Centre Island Bank. 15 20

A hand fog-horn, at the front light, will answer signals from vessels.

Underhill Point is the western extremity of Badgeley Island being situated one mile northward from Evans Point, and between them is formed a deep bight with fairly deep water.

Centre Island is the next large island immediately westward of Badgeley Island. It has a **total length** of 2½ miles in a southwesterly direction, and a greatest width of two-thirds of a mile near its middle. The east extremity is composed of three islets, the eastern of which, named **Harris Island**, is about 200 yards (182^m9) in diameter, and separated from Underhill Point by a deep channel 300 yards (274^m3) broad. 25 30

Bayfield Reef, inside the depth of 18 feet (5^m5), is half a mile long in a northerly and southerly direction, and 200 yards (182^m9) wide, the least depth on it being 10 feet (3^m0). The south extreme of the reef lies three-quarters of a mile westward from Evans Point. Bayfield Reef is divided by deeper water from and extensive flat making off southward from the northeastern part of Centre Island. 35

Clearing marks.—Lions Head Hill in line with the east side of Harris Island, bearing 016°, leads 250 yards (228^m5) eastward of Bayfield Reef, and the same hill in line with Underhill Point, bearing 010°, leads westward of the shoal water from Evans Point. 40

Centre Island Bank, with 6 feet (1^m8) of water on it, extends from the western portion of that island in a southeast direction nearly three-quarters of a mile, narrowing the main channel to a little less than that distance. The southeast corner of this extensive rocky bank is situated 2½ miles eastward from the west point of Partridge Island. A small patch, with 17 feet (5^m2) on it, lies on the latter bearing, but one and one-third miles from the same point. 45

Chart 2286.

Light-buoy.—A red light-buoy, showing a *flashing red* light, is moored off the south extreme of the bank.

Clearing marks.—The south extreme of Kokanongwi Island in line with the south extreme of Badgeley Island, bearing 076° , leads fairly close south of Centre Island Bank and one-third of a mile south of Bayfield Reef. Badgeley Island leading lights in line, bearing 074° , lead a little further south of Centre Island Bank.

Partridge Island, is situated westward of Centre Island, being separated from it by a narrow channel, and is 190 feet (57^m9) high. It is one mile long in an easterly and westerly direction, by over a third of a mile wide, and its south-west extreme is situated $3\frac{3}{4}$ miles westward from Evans Point and northwest $1\frac{3}{4}$ miles from Indian Dock Point (see page 274).

Partridge Island Rocks are two small rocky patches, having 12 feet (3^m7) of water on them, situated a quarter of a mile, and half a mile southeastward, from the southwest point of Partridge Island. In addition to these, shoal water fringes the south coast of Partridge Island an average distance of 200 yards (182^m9).

A small rock, with 9 feet (2^m7) of water on it, lies 250 yards (228^m5) south-westerly from the west end of Partridge Island, but the northwest and north sides of the latter are steep-to.

Landsdowne Channel is the name given to the sound which separates Badgeley, Centre, and Partridge Islands from the mainland peninsula, the north side of which forms the southeast shore of Frazer Bay. The greatest depth of water that a vessel can carry through this channel is 13 to 14 feet (4^m0 to 4^m3), but there are many rocky banks in it. However, the channel is buoyed and a saving of $1\frac{1}{2}$ miles can be effected in the distance from Killarney to Little Current, with increased comfort to passengers by escaping the heavy sea outside Badgeley Island in southeasterly weather.

Buoys.—A black spar buoy, equipped with reflector band, and moored in 12 feet (3^m7) of water, marks a shoal area extending from about the middle of the northern side of Centre Island. A red and black middle-ground spar, two red spars and one black spar, indicate the channel northward of Badgeley Island. The middle-ground buoy should be given a good berth on either side.

A silica quarry known as **Killarney Quarries**, is located on the northwest side of Landsdowne Channel opposite the north end of Badgeley Island. There is a wharf 250 feet (76^m2) long, with 18 feet (5^m5) of water alongside, protected from all weather. The storage bin holds from 5,000 to 6,000 tons and 6,000 tons can be loaded in about ten hours. There is a daily mail service with Killarney or Little Current and, when there is any freight, steamers operating on Georgian Bay make this a port of call.

Leading lights.—Two *fixed white* leading lights are exhibited at Killarney Quarries. The front light is exhibited, at an elevation of 33 feet (10^m1), from a mast with an orange, diamond-shaped daymark, a quarter of a mile eastward of the quarry wharf; the rear light is exhibited, at an elevation of 80 feet (24^m4), from a similar structure, 170 feet (51^m8), 300° , from the front light. These lights lead through the passage between Maxwell Point and the shoals northward of it.

Chart 2286.

Snug Harbour (Lat. $45^{\circ} 57' N.$, Long. $81^{\circ} 39' W.$).—Lansdowne Channel can be entered between Centre and Badgely Islands, and access had to this excellent little harbour, by following these directions. Snug Harbour is situated on the mainland shore of Lansdowne Channel, and is $3\frac{3}{4}$ miles from the west extreme of Partridge Island. The mouth is rather shallow, but not less than 11 feet (3^m4) can be carried in by keeping rather on the western side. Inside the harbour, a vessel will find good swinging room in 5 fathoms (9^m1) over mud. 5

Directions.—Bring Lions Head Hill in the gap between Harris Island and Underhill Point, bearing 013° and so enter Lansdowne Channel, and when inside, steer 324° for the entrance to the harbour; or a vessel of large draught may pick up a berth anywhere northward of Harris Island, in 6 to 8 fathoms (11^m0 to 14^m6) mud bottom. 10

Vessels of light draught may enter Lansdowne Channel between Centre and Partridge Islands by the following directions: 15

A small islet, with trees on it, lies in the south part of the narrow passage between these two islands and is almost joined to Partridge Island; and 150 yards (137^m2) northward of this there is a small bank of stones, 2 feet (0^m6) high. These narrow the channel between them and Centre Island to 100 yards (91^m4). A rock, with 7 feet (2^m1) of water, lies 40 yards (36^m6) southward from the bank, 2 feet (0^m6) high, just mentioned, and between the latter and Partridge Island, there is 12 feet (3^m7) of water. 20

To pass through between Partridge and Centre Islands, open the passage and steer for it, bearing 348° , with not less than 3 fathoms (5^m5). Keep Centre Island on board, until past the bank 2 feet (0^m6) high, when bring the latter in line with the bushy hill on Manitoulin Island $1\frac{1}{4}$ miles back of Indian Dock—known as **The Spur**—bearing 178° . This will carry a vessel over the bar with not less than $3\frac{1}{2}$ fathoms (6^m4). A vessel may anchor on the latter range in this depth over mud, when the south side of **Heywood Island** is well open north of Partridge Island. 25 30

Creak Island lies at the southwest extremity of the peninsula, which separates Lansdowne Channel from Frazer Bay. The island is divided from the peninsula by a boat channel sometimes called the **Hole in the Wall**, through which 4 to 5 feet (1^m2 to 1^m5) can be carried by keeping the east shore on board. A rock, with 2 feet (0^m6) of water on it, lies 150 yards (137^m2) from the south point of Creak Island, and between is a depth of 12 feet (3^m7). 35

Light.—A *flashing white* light is shown, at an elevation of 18 feet (5^m5) from a steel structure, displaying a white daymark situated on the shoal southwest of Creak Island.

Richards Reef, 8 feet (2^m4) high, is situated nearly 200 yards (182^m9) westward of Creak Island; and between them $4\frac{1}{4}$ fathoms (7^m6) may be carried in an emergency. 40

Boat Rock is the name given to a shoal spot, with 6 feet (1^m8) of water on it, lying 350 yards (320^m0) westward of Richards Reef; it is surrounded on all sides by deep water. 45

Steamer Reef, with 13 feet (4^m0) of water on it, lies southwestward one-third of a mile from Richards Reef. To lead westward of both these dangers, keep the east fall of Wekwemikong Hill open west of the southwest extreme Partridge Island, bearing 172° .

Chart 2286.

Buoys.—A red spar buoy is moored, in 28 feet (8^m5) of water, southeastward of Boat Rock. A black spar, equipped with reflector band, is moored in 30 feet (9^m1) of water north of Steamer Rock.

5 **Frazer, Finn, and McGregor Bays.**—**Caution.**—As these bays and inlets, though navigable by small craft and much frequented by cruising, touring and fishing parties, are uncharted and sparseley buoyed, caution should be exercised in entering and navigating their waters, without some local knowledge.

10 **Frazer Bay** extends northeastward from Creak Island for about 7 miles to its head. It is 4½ miles across at the mouth between Creak Island and McGregor Bay Point. There are some small rocky islands in its central portion and an extensive group at the head. Its northern and eastern part is uncharted, and depths not recorded. The fine sheet of water is entered from the southwest between Mary Point—the southeast extremity of Little Cloche Island—and
15 Creak Island already described. The absence of traffic did not justify the survey being pushed any further than to the east and west line, passing half a mile northward of Mary Point.

20 **Coast.**—From Creak Island the shore trends in a northeasterly direction a little over one mile to **Gibson Point**, immediately westward of which a cove runs in a quarter of a mile.

Boyle Cove is situated east of Gibson Point, and is a quarter of a mile in length by 300 yards (274^m3) in breadth, containing shelter in all but northerly winds, in 5 fathoms (9^m1), mud. A spot, with not less than 3¼ fathoms (5^m9), lies a little north of the entrance. From this cove, the coast trends in a north-
25 easterly direction a little over three-quarters of a mile to **Mayes Point**, and is steep-to.

Limestone Point is low and flat, and being composed of rock of this nature, contrasts strongly with the formation of the surrounding country. The east side of this point is steep-to, but on the west side is an extensive rocky bank with
30 12 to 15 feet (3^m7 to 4^m6) of water over it, stretching a quarter of a mile from shore.

Deep Water Island, 48 feet (14^m6) high, lies three-quarters of a mile northeastward from Limestone Point, and, with the exception of a spur which makes out 100 yards (91^m3) from its southwest point, has deep water on all sides.

35 **Quartz Rock**, small and bare, 9 feet (2^m7) high, is situated a quarter of a mile northward of Deep Water Island, and is fairly steep-to on all sides.

Lions Head and **Lions Rump** are two elevations 453 and 470 feet (138^m1 and 143^m3) high, respectively, which together form one hill in the middle of the peninsula in this locality, having from the southward somewhat the form of that
40 animal when lying down. Lions Head serves the purpose of a leading mark to clear various shoals.

McGregor Bay Point, northward about 4½ miles from Creak Island and directly opposite the north end of Little Cloche Island, is the east entrance point to McGregor Bay. An islet lies a third of a mile directly south of the point.

45 **Beacon.**—There is a red and white beacon on McGregor Bay Point.

Chart 2286.

Buoys.—A black spar buoy is moored on the southwestern side of **Duncan City Rock** (uncharted), about one-half mile southwestward of the above beacon. A red spar buoy marks a shoal off **Caroline Rocks**, about a half mile south of McGregor Bay Point. Approximately three-quarters of a mile eastward from the same point, and $1\frac{1}{2}$ cables off its southern side, a red and black middle-ground buoy is moored on the northeastern side of **Black Rock Shoal**, the position of which is approximate. 5

Finn Bay has its entrance in the north shore of Frazer Bay, about 2 miles east of McGregor Bay Point. Finn Point is the east entrance point. A group of small islands lies a mile off the entrance, which is quite narrow and with a depth of about $2\frac{3}{4}$ fathoms (5^m1). Finn Bay has a length of about 8 miles extending easterly into the mainland and an average width of about one-half mile. 10

There are many rocks close inside the entrance, and scattered rocks and islets along its shore and at the head, where the last 2 miles of its length narrows suddenly forming an inner arm, ending in low land to the westward of Gulch Hill (see page 254). 15

Channel Buoys.—A black spar buoy marks a shoal off the northern shore northwestward of **Finn Point**. A red spar is moored, in 18 feet (5^m5) of water on the edge of the shoal north of Finn Point. Just inside the point the dredged channel leading into the bay has a reported depth of 14 feet (14^m3). The south side of the dredged area is marked by a red spar buoy. The course followed, entering the bay, is parallel to the south shore of McGregor Bay Point and, as soon as the dredged area is passed, the course swings sharply to the right and follows the north shore of Finn Point. 20 25

Broad Hill is comparatively close to the south shore of Finn Bay.

Finn Bay is much frequented by yachting and cruising craft. It is uncharted.

McGregor Bay, entered from Frazer Bay by a deepwater passage between Little Cloche Island and McGregor Bay Point, is quite large and almost completely filled with islands, large and small, partly in groups. The largest insular land is known as McGregor Island, lying in the northeastern portion and is approximately 3 miles long and one mile in breadth. 30

Many of the narrow, intricate channels among the islands are navigable for small craft with local knowledge, the main passage in the part south of McGregor Island being known as the **East and West Channel**, connecting with East Channel between the east end of McGregor Island and the mainland, and leading into North Channel, which follows the north shore of the island, and gives access to the most northerly arm of McGregor Bay, known as **North Bay**. 35

McGregor Bay post office is located on an island just west of the large McGregor Island, and is distant about 9 miles from the Algoma Eastern Railway. 40

Inside of McGregor Bay entrance, and a half mile northward of the point, there is a group of islands that extends east and west across the lower end of the bay for a total distance of about $1\frac{1}{2}$ miles, from near the northern end of Little Cloche Island. 45

Jumbo Island (Lat. $46^\circ 03' N.$, Long. $81^\circ 39' W.$), is one of the larger ones in the central eastern part of McGregor Bay, and lies about $4\frac{1}{2}$ miles northeastward from McGregor Bay Point. It has a group of about fifty small islets extending from its southwestern point for about $1\frac{1}{4}$ miles. On the east side of Jumbo Island is another of about the same size, and separated from it by a very narrow boat passage, known at its southern entrance as **Old Portage 6-foot Channel** and at the northern end as **Split Rock Channel**. 50

Chart 2286.

Harrison Island is about half a mile in length and half that in width northwest of the northern part of Jumbo Island. There are about fifty smaller islands between Jumbo and Harrison Islands. The latter is separated from the
5 higher land of a point of the north mainland shore by a narrow channel known as **Dog Home Pass**.

West a half mile from Jumbo Island, and about the same distance southwestward from Harrison Island, is a group of islands of various sizes and approximately one hundred and twenty in number.

10 Approximately one-quarter of a mile westward of the group of islands just described, there lies another group with several comparatively large islands, the westernmost of which is the largest being about one-quarter of a mile in length. There are about ninety islands in this group, and southwestward from the largest
15 western island, there extends a string of about ten islets and rocks for one-half a mile into the main open body of the bay, and distant about one-third of a mile from the east shore of Wardrop, or Old Birch Island.

Northwestward from the group last described, there lies a larger island, nearly three-quarters of a mile in length and parallel to the north mainland shore, separated from the latter by a passage averaging a quarter of a mile in width.
20 Three-quarters of a mile eastward from it, is an indentation in the north shore known as **Pathfinder Bay**, with a small island, **Halcyon Rock**, in the middle of its entrance.

From here, the north shore of the bay runs straight westward for $4\frac{1}{2}$ miles to the extreme northwestern end of McGregor Bay, which latter portion is a
25 narrow irregular arm containing many small islands, with a smaller indentation on its north side.

At this point, the waters of McGregor Bay are separated from those of Whitefish Bay by a narrow neck of land only a few hundred yards across, being part of Cloche Peninsula, along which runs the Little Current branch
30 of the Algoma Eastern Railway.

Birch Island is a large island in the west end of McGregor Bay about a third of a mile from the east shore of Cloche Peninsula and directly north about 2 miles from the entrance. The island is approximately $1\frac{1}{2}$ miles long and three-quarters of a mile in breadth. North and westward from it lie many islets and
35 rocks reaching into the above-described western arm of McGregor Bay.

The north shore of McGregor Bay is part of the **Birch Island Indian reservation**.

Cloche Channel.—The west sides of Frazer and McGregor Bays are formed by **Little Cloche Island** (see page 281), which extends northward from Mary
40 Point for $2\frac{1}{2}$ miles, its upper end being irregular and indented by a small narrow bay encumbered with rocks, and Cloche Peninsula, which reaches southward from the north shore for about 5 miles between McGregor Bay on the east and **Whitefish Bay** and Cloche Channel on the west. The peninsula has an extreme width of about $2\frac{1}{4}$ miles.

45 Cloche Channel, uncharted, is entered from within McGregor Bay at the extreme north end of Little Cloche Island through a narrow rocky passage which first trends southwestward for about $1\frac{1}{2}$ miles, rounds the south end of Cloche Peninsula, known as Cloche Bluff, by reason of the 220-foot (67^m1) knoll near its southern side, and then runs northward through a narrow, rock-strewn passage for
50 over a mile to a wider expansion that leads further northward for about 3 miles to the waters of Bay of Islands, North Channel. Cloche Bluff is almost an island, the lower end of the peninsula being penetrated by a narrow inlet on the east side at **Dreamers Rock**, which all but meets the head of a similar inlet on the western side. The few yards of separating land is crossed by a portage.

Chart 2286.

Southwest Gut (*see* page 281), a boat passage which separates Little Cloche from Great Cloche Island, enters the southern bend of Cloche Channel south of Cloche Bluff.

Bridge.—The railway bridge of the Algoma Eastern Railway spans Cloche Channel at the narrows a mile northward of the south extreme of the peninsula. 5

Grassy Bay is an indentation of the shore of Great Cloche Island, on the west side of an expansion of Cloche Channel, a short distance north of the railway bridge.

Birch Island Indian village is on the northwest shore of Cloche Peninsula at the northern end of Cloche Channel, and is a station on the Algoma Eastern Railway which line follows close to the west shore of the peninsula. The nearest post office is Poncet. 10

Communication.—In addition to the Algoma Eastern Railway, a motor road from Espanola, on the main Sudbury-Sault Ste. Marie Highway, leads to the ferry crossing at Little Current skirting the east end of Whitefish Bay, west end of McGregor Bay and down through the length of Cloche Peninsula to Great Cloche Island. 15

Heywood Island is nearly $2\frac{2}{3}$ miles long east and west, with an average width of three-quarters of a mile, and rises to a height of 178 feet (54^m3). The water on the south shore is good to the line of the points. **South East Point**, is also steep-to, and lies $1\frac{3}{4}$ miles westward from the western and nearest part of Partridge Island. 20

Watts Rock, awash, is a small obstruction, lying between South East Point and Partridge Island, and distant nearly half a mile from the former. A spur of 3 fathoms (5^m5) makes off from it in a westerly direction nearly 200 yards (182^m9). A depth of 14 fathoms (25^m6) will be found between this rock and Heywood Island. 25

Clearing marks.—To pass one-quarter of a mile southward of this danger, keep the summit of Badgeley Island in line with the north side of Partridge Island, bearing 072° . **Frazer Bay Hill** on the north shore of Frazer Bay in line with Richards Reef, bearing 041° , leads the same distance southeast of this danger. 30

Powell Cove is an indentation on the east side of the island northward of South East Point, and in which a vessel may find shelter from westerly gales in 5 fathoms (9^m1) mud and sand. 35

Powell Cove Bank, with 3 feet (0^m9) of water on it, lies 300 yards (274^m3) eastward from the north entrance point of Powell Cove and three-eighths of a mile southwestward of Heywood Rock. A channel of 3 fathoms (5^m5) exists between this bank and Heywood Island.

Heywood Rock (*Lat.* $45^\circ 56' N.$, *Long.* $81^\circ 44' W.$), 3 feet (0^m9) high, is a white quartz reef lying northward, over three-quarters of a mile distant from South East Point, and one-third of a mile from the nearest part of Heywood Island South East Point, and one-third of a mile from the nearest part of Heywood Island. A rocky spit makes out from it northward 100 yards (91^m4); and a bar connects it with Powell Cove Bank, over which, however, a vessel may carry 3 fathoms (5^m5), by keeping the north end of Northwest Burnt Island exactly in line with the south side of Partridge Island, bearing 115° . Heywood Rock is otherwise steep-to. 40 45

Chart 2286.

Split Rock, with a depth of 6 feet (1^m8) over it, is a very dangerous obstruction to vessels using this channel; it lies with Heywood Rock nearly in line with the north side of the island of that name, bearing 274°, and distant from the former 5 two-thirds of a mile; it has deep water all around it.

Buoy.—A black spar buoy is moored off the northern side of Split Rock.

Clearing marks.—Skull Point (Manitoulin Island) open southwest of Partridge Island, bearing 124°, leads close southwest of Spit Rock. The north shore of Heywood Island kept well open north of Heywood Rock, will lead north 10 of the same.

Shoal Island lies on the eastern side of the large bight on the north shore of Heywood Island, its north point being situated nearly a mile westward from Heywood Rock.

Shoal Island Spit extends from the island of that name one-third of a 15 mile in a northwesterly direction; and has on it depths varying from 6 to 12 feet (1^m8 to 3^m7).

Clearing mark.—The southwest side of Partridge Island, in line with Heywood Rock, bearing 118°, leads northeastward of this spit.

Buoy.—A black spar buoy, moored in 36 feet (11^m0) of water, marks the 20 northern extreme of Shoal Island Spit.

Browning Island is situated on the western side of the same bight and nearly half a mile west of Shoal Island, and between the two the water is shallow.

Browning Cove, lying immediately southwest of Browning Island, contains excellent shelter from any wind in 3 to 4 fathoms (5^m5 to 7^m3) mud. The western 25 shore of Browning Island should receive a berth of 150 yards (137^m2) until inside the harbour. A mud bank extends about the same distance from the west side of the harbour, but, with these exceptions, the shores are quite clean. On the western side, and south of the muddy flat just alluded to, an arm runs in a quarter of a mile with a depth of 3 fathoms (5^m5) mud.

Stanley Point, a quarter of a mile west of Browning Island, is fairly 30 steep-to, and from it the coast turns away southwest three-quarters of a mile to Oxley Point, the bight formed between them being shallow.

Oxley Point, the very westerly extremity of Heywood Island, has a flat 35 of 3 to 3½ fathoms (5^m5 to 6^m4) extending from it in a northwest direction a quarter of a mile.

Wharton Point is situated a little more than one-third of a mile southward from Oxley Point, and from it a narrow shoal spit makes out 150 yards (137^m2), at which distance there is a depth of only 8 feet (2^m4).

Light.—A *flashing white* light is shown, from a pole displaying a white day- 40 mark, on Wharton Point.

Cape Smith (Lat. 45° 48' N., Long. 81° 35' W.) forms the southeast entrance point of Smith Bay at the head of which is situated the Indian village of **Wekwemikong**. The cape is rendered conspicuous by the sudden termination of the clay bank described (*see* page 85), which culminates here in a height 45 including the trees, of 370 feet (112^m8). The northeast extreme of the cape bears 339°, distant 17½ (15 nautical) miles, from the east point of Lonely Island; and 201°, distant 12 (10½ nautical) miles, from Killarney East lighthouse, and may be passed at a distance of 200 yards (182^m9) in a depth of 5 fathoms (9^m1).

Chart 2286.

Light.—A *flashing white* light is shown, at a height of 24 feet (7^m3), from a pole displaying a white daymark, erected on shore near The Nest, about 1½ miles south of Cape Smith.

The eastern portion of Manitoulin, from Bold Point southward to Hungerford Point, is part of the **Manitoulin Indian Reserve.** 5

(For the shore south of Cape Smith, see Chapter IV, page 63.)

Campbell Rock, with 12 feet (3^m7) of water on it, lies 2½ miles northeast from the northeast extreme of Cape Smith.

Light-and-bell-buoy.—On the west side of this shoal is moored a light-and-bell-buoy, painted red, and showing a *flashing red* light. The bell is rung by the motion of the buoy on the waves. 10

Clearing marks.—Horsburgh Point just open southeast of Clay Cliff, bearing 210°, leads two-thirds of a mile southeast; and the south side of Papoose Island touching the north side of Young Squaw, bearing 080°, leads a quarter of a mile northward of the rock. 15

The south side of Papoose Island touching the north point of Squaw Island, bearing 077°, leads close south of Campbell Rock.

Squaw Island is situated with its south extremity bearing 081°, distant 5¾ miles, from the northeast extreme of Cape Smith. This island itself is low, but its thick and fairly high timber enables it to be seen at a considerable distance. It has a total length of 1½ miles and a maximum breadth of three-quarters of a mile. 20

Young Squaw is a wooded islet half a mile northeastward from **North Point** of Squaw Island, and to which it is connected by a rocky bar, with 6 feet (1^m8) of water on it. Young Squaw may be approached to 100 yards (91^m4) from the eastward only; in all other directions the water is shallow. 25

Annie Rock, with 3 feet (0^m9) on it, lies half a mile northwest from Young Squaw, with shoal water between them, and also between the rock and North Point of Squaw Island. 30

West Rock is a small bank of limestone gravel 5 feet (1^m5) high, situated nearly 1¼ miles southwest from North Point of Squaw Island, and is separated from the latter island by a narrow channel from 4 to 5 fathoms (7^m3 to 9^m1) deep, but which should not be attempted by strangers.

North Spit extends half a mile northward from West Rock, at which distance there is a depth of 13 feet (4^m0). West Rock should not be approached from the west nearer than a third of a mile. Half a mile from West Rock is the southern termination of a bank, with a depth of 3 fathoms (5^m5), rapidly shoaling as West Rock is approached. 35

Ragged Point (Lat. 45° 50' N., Long. 81° 28' W.), is situated about the middle of the west side of Squaw Island, the whole of which is fringed with boulders and shoal water for a distance of a quarter of a mile, while off this particular point a bank extends southwestward half a mile with depths under 3 fathoms (5^m5). 40

South Point of Squaw Island is the southerly termination of the island, and from it shallow water extends in a southerly direction a third of a mile. Between the last two mentioned points is an open bight full of boulders. 45

The east side of Squaw Island, from the southeastern entrance point of the harbour to a quarter of a mile north of South Point, has a steeper character and may be approached to 300 yards (274^m3). 50

Chart 2286.

The Bar is a shallow, rocky bank immediately eastward of the entrance of the harbour, and has depths on it ranging from 6 to 12 feet (1^m8 to 3^m7).

Clearing marks.—To pass northeast of it, Lions Head Hill should be kept 5 open north of Young Squaw, the latter bearing 316°. To lead southeast of it, keep any part of Clay Cliff (Cape Smith shore) open southeast of Squaw Island, bearing about 230°.

Squaw Island Harbour is formed on the northeast side of Squaw Island, and consequently contains good shelter from the prevalent southwesterly as 10 indeed from all winds. The depth, in the harbour itself, ranges from 12 to 15 feet (3^m7 to 4^m6) over mud, and were the entrance buoyed, 13 feet (4^m0) of water could be carried in, although, in very low stages, there may be 6 feet (1^m8) less. Without the assistance of buoys, no vessel drawing more than 8 feet (2^m4) should 15 attempt to enter; larger vessels should anchor a quarter of a mile southeast from the southeast entrance point; smaller vessels may enter by the following directions.

Directions.—If from the southeast, bring Lions Head Hill (*see* page 262) in line with North Point (Squaw Island), bearing 319°, and proceed to the south- 20 east entrance point on this mark; round the latter closely, to avoid the 1½ fathom (2^m1) rock lying in the entrance, and anchor in the middle of the harbour as convenient. If from the northwest, give the ground about Annie Rock a good berth; after passing Young Squaw, keep Lions Head Hill open northeast of it, the latter bearing 316°, until Clay Cliff is seen open of South Point of Squaw Island; steer 25 on this mark until the low southeast entrance point of the harbour bears 286°, when the latter point may be steered for. Those locally acquainted, approach the harbour from the northeast and cross The Bar with the southeast entrance point in line with the willows in **Killarneyms Cove** (a small indentation on the west side of the harbour) carrying not less than 10 feet (3^m0).

Alec Clark Rock, under the depth of 3 fathoms (5^m5), is a narrow bank 30 half a mile long in a northwesterly and southeasterly direction, its shallowest part with depth of 13 feet (4^m0) lying three-quarters of a mile northeast from Young Squaw, with a depth of 4 to 6 fathoms (7^m3 to 11^m0) between them.

Matheson Shoal, with 3½ fathoms (6^m4) on it, lies 2¼ miles 090° from Young Squaw.

Azov Ledges are two dangerous banks, with 9 feet (2^m7) and 6 feet (1^m8) 35 on them, lying southwestward nearly 2 miles and 1½ miles, respectively, from South Point, Squaw Island. These ledges are separated from Squaw Island by a channel over three-quarters of a mile wide, with 5 to 7 fathoms (9^m1 to 12^m8) of water. The steamer *Bayfield* has run through this channel by keeping Frazer 40 Bay Hill (a conspicuous hill on the north side of Frazer Bay) in line with the northeast point of Kokanongwi Island, bearing 334°, but the latter being difficult of discernment, the leading mark cannot be recommended to strangers.

Clearing marks.—The northwest side of Green Island touching the south- 45 east extreme of Squaw Island, bearing 046°, leads 400 yards (365^m2) southeast of Azov Ledges. The north extreme of Cape Smith in line with the southeast end of Wekwemikong clay bank, bearing 283°, leads over three-quarters of a mile south of Azov Ledges.

In thick weather do not shoal to less than 10 fathoms (18^m3) in the vicinity of Squaw Island and its shoals.

Chart 2286.

Papoose Island, 10 feet (3^m0) high, bears 273°, distant nearly 3 $\frac{2}{3}$ miles from Gull Island, and excepting that it is more wooded has much the same physical character. It bears also 079° and is distant 4 $\frac{2}{3}$ miles from Young Squaw. The island is one-third of a mile long east and west, quite narrow, and divided into two portions by a boat channel. A few huts are erected on the western and larger portion, and a small wharf to facilitate the landing of crews during fishing season. The east, north, and northwest sides of Papoose Island may be approached to 200 yards (182^m9), but from the south side a dangerous rocky ledge extends half a mile. 5 10

Clearing mark.—To pass southwestward of this reef keep **Broad Hill**, 653 feet (199^m0) high, lying north of Killarney Bay, in line with Killarney East light-house, bearing 324°.

Gull Island lies 3 $\frac{2}{3}$ miles eastward from Papoose Island. It is 10 feet (3^m0) high and composed of fossilized limestone, is 350 yards (320^m0) long northeast and southwest and 100 yards (91^m4) broad, the southwestern portion having on it a few stunted trees and bushes. Shoal water extends 200 yards (182^m9) from the southeast side and 250 yards (228^m5) from the southwest extremity; it is otherwise bold-to. 15

Seven Fathom Bank, under the depth of 10 fathoms (18^m3), is 1 $\frac{1}{4}$ miles in diameter, its shoalest and northern edge, with a depth of 6 fathoms (11^m0), lying 106°, distant 4 $\frac{1}{2}$ (4 nautical) miles, from the northeast extreme of Gull Island. The course from North Channel of Lake Huron to the fairway buoy of Byng Inlet (*see* page 230) leads over this part of Seven Fathom Bank, a cast on which, in thick weather, may afford a check on a vessel's position. 20 25

Green and Scarecrow Islands have been described on page 251.

Smith Bay is the somewhat V-shaped bay extending 5 $\frac{1}{4}$ miles westward of Cape Smith. It contains many shoals and islands, but the southwestern part is clean and affords good anchorage, in 4 to 9 fathoms (7^m3 to 16^m5) over mud, in all winds except those from a little east of north through east to a little south of east. 30

From the northwest prong of Cape Smith, the south shore of the bay trends southwestward three-quarter of a mile to East Red Cliff, and 1 $\frac{1}{2}$ miles to West Red Cliff.

Between the two prongs of the cape the shore is shallow for 300 yards (274^m3) forming **Red Cliff Flat**; southwestward of this, the bank gradually widens until northwest from East Red Cliff it attains a breadth of three-quarters of a mile with depth of 9 to 12 feet (2^m7 to 3^m7). 35

Goldhunter Rock (*Lat.* 45° 49' N., *Long.* 81° 37' W.), with 6 feet (1^m8) over it, is a very dangerous obstruction to the navigation of Smith Bay, and lies 40 northwestly, one mile from the northwest prong of Cape Smith. It is a circular patch of small boulders, 200 yards (182^m9) in diameter.

Clearing marks.—The two prongs of Cape Smith in one, bearing 103°, lead 300 yards (274^m3) south of it. The top of Badgeley Island in line with the east side of Big Burnt Island, bearing 011°, leads 400 yards (365^m8) west of Goldhunter Rock. The north fall of The Spur in line with the middle of the high portion of William Island, bearing 328°, leads northeastward of this rock. The west end of **Bushy Clump** open east of the east end of West Red Cliff, bearing 188° leads close eastward of it. 45

Chart 2286.

Doyle Rock, small in extent, with 22 feet (6^m7) of water upon it, lies isolated in the middle of the mouth of Smith Bay, with deep water on all sides. It bears 285°, distant nearly 3 miles, from the northeast point of Cape Smith and, 176°, 5 distant 2 miles, from the west extreme of William Island.

Coast.—From West Red Cliff, the coast trends westward 2 miles to **Sturgeon Point**, forming three long, shallow bights. Shallow water extends 300 yards (274^m3) northeastward from Sturgeon Point, and thence continues eastward to the outer part of Red Cliff Flat. Good anchorage may be had three- 10 quarters of a mile northwest of West Red Cliff, in 6 fathoms (11^m0) mud, by keeping North Point of Squaw Island well open north of Cape Smith, the latter bearing 068°.

From Sturgeon Point, the southern shore of Smith Bay runs westward 2 $\frac{1}{3}$ 15 miles, when it turns north to the village of Wekwemikong, forming the head of the bay $1\frac{1}{3}$ miles broad. The southern portion of the latter should not be approached nearer than half, nor the village to less than a quarter of a mile.

Wekwemikong is situated on the rising ground in the northwest corner of Smith Bay; a path connects it with James Bay, and a road communicates with Manitowaning, which has telegraphic connection with the mainland via 20 Little Current. With the exception of the Roman Catholic missionaries and teachers, the population is entirely Indian. There is a small boat pier here, but no wharf suitable for a vessel.

From the village, the north coast of the bay trends in a northeasterly direction 3 miles to **Nadeau Point**, and from the southwestern half of it, a bank 25 extends half a mile, at which distance there is but 10 feet (3^m0) of water.

Clearing mark.—To pass southeast of this bank, keep the southeast point of Big Burnt Island in line with the southeast point of William Island, bearing 037°.

William Island is situated on the northwest side of Smith Bay. It is half 30 a mile long in a northeast direction, with greatest breadth of 200 yards (182^m9) at the southwest extremity. Shallow water with rocky bottom extends a quarter of a mile southeastward and southwestward 200 yards (182^m9) from the south point of William Island. The northwest side of it may be approached to 100 yards (91^m4).

35 **Pelkie Rock**, with 8 feet (2^m4) of water on it, is an important danger to vessels entering the bay from the north. It is an isolated shoal one-third of a mile long northeast and southwest, and 200 yards (182^m9) broad, with its southern end situated $1\frac{1}{10}$ miles eastward from the south point of William Island.

40 **Clearing mark.**—High Beach (Badgeley Island) rear leading light in line with the east extreme of Burnt Island, bearing 002°, leads 400 yards (365^m8) east of Pelkie Rock.

Frank Ledge, with 5 feet (1^m5) of water on it, corresponds very nearly in shape and size to the last-mentioned danger. Its north end is situated two-thirds of a mile southeast from West Mound, and half a mile southward from the south 45 point of William Island.

Clearing mark.—The highest part of Leading Mark Hill (Killarney) in line with the southeast point of Big Burnt Island, bearing 028°, leads close eastward of this ledge.

50 **West Mound** is a gravelly bank, 3 feet (0^m9) high, lying nearly half a mile southwestward of William Island, and from it shoal water extends in a southerly

Chart 2286.

direction a third of a mile, to the eastward 250 yards (228^m5), and to the northward a quarter of a mile, leaving a 4-fathom (7^m3) channel 350 yards (320^m0) broad between it and William Island.

In addition to the bank, which makes out northward of West Mound itself, 5 are two other shallow patches, almost joined, the northern one lying three-quarters of a mile from it in a northerly direction. On the northern shoal, there is less than one foot (0^m3) of water, and, to avoid these shoals, vessels should keep within a quarter of a mile of the southwest part of William Island.

East Mound is a somewhat similar small bank, 3 feet (0^m9) high, and lying 10 eastward a quarter of a mile from the northeast point of William Island, with no passage between. Shoal water makes out 300 yards (274^m3) from East Mound in a northeast direction, almost joining a bank, with 13 feet (4^m0) of water over it, known as Nobles Bank.

Nobles Bank, the northeast edge of which is two-thirds of a mile from 15 East Mound, lies nearly a mile northeast from William Island.

Clearing mark.—The north fall of The Spur in line with the southwest side of Hog Island, bearing 301°, leads northwestward of this bank and Pelkie Rock.

John Ledge, the shoalest part of which has only 3 feet (0^m9) on it, has a 20 total length of two-thirds of a mile in a northeast and southwest direction. Its southwest edge lies a quarter of a mile northwest from East Mound, the channel between being reduced to 200 yards (182^m9) with least water 21 feet (6^m4).

From Nadeau Point on the Manitoulin shore, the coast trends 1³/₄ miles northward to **Fishing Island Cove**, a snug boat harbour protected by **Fishing 25 Island**. In addition to the two banks northward of West Mound, shoal water extends from the shore an average distance of a quarter of a mile. From Fishing Island Cove, the stony, shallow and broken up coast trends in a general northerly direction nearly 2 miles to **Prairie Point** (see page 273) leaving to the east a group of islands known by the general name of **Burnt Islands**. As an examination 30 failed to discover a channel through them fit for anything larger than a small boat—and even she would require local knowledge—only the outside islands of the group will be described.

Hog Island (Lat. 45° 52' N., Long. 81° 38' W.), is situated nearly midway and in line between the southern point of Big Burnt and Fishing Islands. A 35 large bank of dry stones makes out a quarter of a mile, from its southwest side; while from the south point shoal water extends a third of a mile.

Gooseberry Island, small with a few trees on it, is situated nearly half a mile eastward from the south point of Hog Island; shoal water extends 200 yards (182^m9) southeastward from it. 40

Big Burnt Island, the largest and easternmost of the whole group, is 1¹/₄ miles long and half a mile in greatest breadth. An island, 150 yards (137^m2) in diameter, lies 300 yards (274^m3) from the south coast, being connected therewith by a shallow bar. From the latter island, a reef extends a quarter of a mile southward and 300 yards (274^m3) eastward. The east and northeast sides of 45 Big Burnt Island are steep-to.

Directions for Smith Bay.—If from the south, follow round Cape Smith about a quarter of a mile distant, and when abreast of the northwest point of the cape, if intending to pass south of Goldhunter Rock, bring the middle of the village of Wekwemikong about a point on the starboard bow until the two 50

Chart 2286.

points of Cape Smith come in line, bearing 103° . This range should be on astern before the west end of Bushy Clump and east end of West Red Cliff are touching, but not before East Red Cliff bears about 173° . Keep the two points of the
 5 cape in line, until the summit of Badgeley Island is in line with the east side of Big Burnt Island, bearing 011° when Goldhunter Rock and the outer part of Red Cliff Flat will be passed.

A vessel may anchor off West Red Cliff, on the last-mentioned clearing mark, or proceed further up the bay. Not more than 10 fathoms (18^m3) over mud will
 10 be found anywhere inside the line joining Cape Smith and William Island.

If entering the bay northward of Goldhunter Rock, The Spur should not be brought westward of the middle of the high portion of William Island, until the summit of Badgeley Island is over the east side of Big Burnt Island, when a vessel may haul toward the cape shore and anchor, or proceed up the bay.
 15 In doing the latter, she will probably pass close to Doyle Rock, the least water on which is 22 feet (6^m7).

From North Channel of Lake Huron.—When southward of Burnt Island bank, the east shore of Big Burnt Island may be approached within 200 yards (182^m9). After passing it, keep High Beach (Badgeley Island) rear light open
 20 east of Big Burnt Island, the latter bearing 360° , to lead eastward of Pelkie Rock, and when East Mound comes in line with The Spur, bearing 316° , steer up the middle of the bay, taking care to avoid Doyle Rock, or, if wishing to anchor under Cape Smith, edge a little westward to bring the summit of Badgeley Island in line or closed with the east side of Big Burnt Island, in order to lead westward
 25 of Goldhunter Rock.

If wishing to anchor under the northwest side of William Island, keep high Beach rear leading light open east of Big Burnt Island to clear the bank southward of the latter, until West Mound bears 231° , in line with the high bank on the north shore of the bay, as shown by view "A" on chart No. 2296. Proceed on this
 30 leading mark, and anchor northward of the southwest grassy point of William Island, in 4 and $4\frac{1}{2}$ fathoms (7^m3 to 8^m2) clay, or if wishing to proceed to the head of Smith Bay, after passing the point of the island just mentioned, keep the top of Badgeley Island in line with the same point, bearing 021° , which will lead between West Mound and Frank Ledge.

A vessel from the southeast may proceed to the anchorage under the northwest side of William Island by steering for West Mound on a bearing of 287° , which will lead between William Island Bank and Frank Ledge with $3\frac{1}{2}$ fathoms (6^m4).
 35

Bernard Rock, small in extent, with 10 feet (3^m0) of water on it, lies 054° ,
 40 a little more than $2\frac{3}{4}$ miles from the northeast and nearest point of Big Burnt Island, and in case the buoy marking it should be displaced, its position in one direction may be known, from the fact of its lying with William Island its own apparent breadth, open southeast of Big Burnt Island. To pass northwest of it, therefore, keep these islands touching and bearing 221° .

Additional clearing marks.—Summit of Heywood Island in line with the south side of Partridge Island, bearing 273° , leads three-quarters of a mile north of it. The summit of Badgeley Island over the southwest end of Kokanongwi Island, bearing 348° , leads half a mile west of it, and the same hill in line with the opposite end of Kokanongwi Island, bearing 327° , leads three-quarters of a
 50 mile northeast of this danger. The south fall of Sheguindah Hill, south of Little Current, in line with Bold Point, Manitoulin Island, bearing 271° , leads 200 yards (182^m9) south of Bernard Rock.

At night give it a good berth by a bearing of High Beach rear light.

Chart 2286.

Buoy.—Bernard Rock is marked by a red and black middle-ground spar buoy, moored on its south side.

Northwest Burnt Island is situated nearly half a mile northwestward of Big Burnt Island. It is smaller than the latter, being a little less than a mile long north and south by half a mile in breadth. It is surrounded on all sides by shoal water, except the northwest side, where the shoal extends only 200 yards (182^m9) and the east point, which the deep water reaches to within 100 yards (91^m4).

Burnt Island Bank is a dangerous shoal extending northward and eastward from Northwest Burnt Island, the total length of the shoal in an east and west direction being nearly $1\frac{1}{4}$ miles. The western part is the shoalest, there being only one foot (0^m3) of water on it, and in consequence generally showing itself by breaking, but the eastern part, with 6 feet (1^m8) on it, is the most dangerous, for being the turning point into North Channel of Lake Huron it is more likely to pick up a vessel.

Clearing marks.—To pass eastward of this bank, keep Lions Head Hill in line with the east end of High Beach, bearing 353°, and to pass northward of it no better mark offers than to bring Eads Bush (Little Current) northward of the summit of Heywood Island, and in line with the south shore of Partridge Island, bearing 280°.

Light-buoy.—A black light-buoy, showing a *flashing white* light, is moored in 7 fathoms (12^m8) off the eastern extreme of Burnt Island Bank.

Skull Point is a point of Manitoulin, one mile west from the north part of Northwest Burnt Island. Skull Point is situated also one mile northward from Prairie Point and the shore between them is foul.

Skull Point Reef extends from the point in a direction a little eastward of north, half a mile, the least water on it being 3 feet (0^m9). Between this reef and Burnt Island Bank, there is a deep water space of two-thirds of a mile.

Clearing marks.—Indian Dock Point just in sight, bearing 246°, leads northwestward of this reef, and the middle of Kokanongwi Island in line with the south point of Badgeley Island, bearing 069°, also leads clear on the same side.

Buoy.—A black spar buoy, moored in 3 fathoms (5^m5), marks the northern side of Skull Point Reef.

Bold Point (Lat. 45° 54' N., Long. 81° 40' W.), lies three-quarters of a mile northwest of Skull Point, being the most northerly point of this peninsula. Between them a bight runs in a quarter of a mile, in the middle of which are dry stones and sunken rocks. From Bold Point, the shore turns to the southwest, and runs in that direction over three-quarters of a mile to Indian Dock Point. Between these points is situated the cove, which contains a wreck of a once fine wharf or dock, from which the turning point into Manitowaning Bay derives its name.

Manitowaning Bay, the next large indentation west of Smith Bay, is a fine sheet of water, and, from the northern part of Ten Mile Point, is $10\frac{3}{4}$ (9 $\frac{1}{4}$ nautical) miles in length, the breadth from the above point to Rabbit Island being $4\frac{1}{2}$ (3 $\frac{9}{10}$ nautical) miles, and clear of outlying dangers. At the head is

Chart 2286.

pleasantly situated the town of Manitowaning, where reside the Indian Superintendent and Medical Officer for this and Wekwemikong Indian Reserve close by, where live remnants of the Ottawa and Algonquin Indians. Limited supplies
5 can be obtained at Manitowaning and almost daily steamer communication had with Sault Ste. Marie and the southeastern ports of Georgian Bay. There is highway connection with South, Michael, and Providence Bays to the south and Little Current, West Bay, and Gore Bay villages to the north and westward. There is telephonic communication throughout the island and telegraphic con-
10 nection with the mainland via Little Current.

Manitou Lake lies a short distance inland, a few miles westward from Manitowaning.

Indian Dock Point may be said to be the eastern entrance point of Manitowaning Bay. Shoal water extends from the shore on either side of this
15 point for a distance of nearly a quarter of a mile. Southwestward half a mile and 300 yards (274^m3), respectively, from the point, are situated **Dufferin** and **Lisgar Islands**, small and wooded.

The north point of **Rabbit Island**, a low and thickly-wooded island, lies nearly 2½ miles southwest from Indian Dock Point, and the broken coast between
20 them has shoal water extending in some places a distance of two-thirds of a mile. Rabbit Island, a third of a mile long by 200 yards (182^m9) in greatest breadth, is separated from the shore by a passage 350 yards (320^m0) wide, through which, by keeping nearer the island, a depth of 2 fathoms (3^m7) may be carried.

Clearing mark.—The highest part of Leading Mark Hill seen over the
25 southeastern extreme of the main portion of Centre Island, bearing 050°, leads northwestward of all the shoal water between Indian Dock Point and Rabbit Island.

Rabbit Island Rock, with 5 feet (1^m5) of water over it, lies half a mile southwestward from the west point of Rabbit Island, and, to avoid it, keep Indian
30 Dock Point and Lisgar Island well open northwestward of Rabbit Island, the north point of the latter, bearing 050°.

Monk Point is distant one mile southwesterly from Rabbit Island, and between them the shore is foul for a distance of over a third of a mile.

Pender Islets is the name given to two small islands lying in the same
35 direction, half a mile from Monk Point, and may be approached to 200 yards (182^m9).

Ironsides Rock, 5 feet (1^m5) high, is the name given to a small collection of boulders 100 yards (91^m4) from the shore, situated in a southwesterly direction
40 2½ miles from Pender Islets. The coast between them, when not less than three-quarters of a mile southward of the latter, may be approached to 200 yards (182^m9). From Ironsides Rock, the coast trends in a southwesterly direction over 2 miles to **Phipps Point** and may be approached to 300 yards (274^m3).

Phipps Point Shoal, a rocky patch with 9 feet (2^m7) least water on it, lies a quarter of a mile westward from the southern part of Phipps Point. The shoal,
45 within the depth of 3 fathoms (5^m5) is a quarter of a mile in length north and south by 200 yards (182^m9) in breadth, and is separated from Phipps Point shore bank by a channel 250 yards (228^m5) broad and 6 fathoms (11^m0) deep.

Clearing mark.—Strangers should pass a third of a mile westward of the shoal by keeping the west side of Fanny Island, in Manitowaning Harbour,
50 touching Town Point on which a lighthouse is erected, bearing 178°, and, at night, the light on the same bearing.

Chart 2286.

Fanny Island, being thickly wooded, is hard to distinguish from its background. The mill and black iron smokestack are good marks for Town Point.

Buzwales Cove is the indentation immediately southward of Phipps Point, and is shallow. 5

Mocassets Landing is the name given to a small wharf on that part of the east shore $1\frac{3}{4}$ miles southward of Phipps Point, and immediately opposite the town of Manitowaning. The coast between Buzwales Cove and Mocassets Landing may be approached to 200 yards (182^m9). Thence the coast trends in a southeasterly direction nearly straight a little over one mile to **Stephens Cove**, 10 into which flows a stream, and this part of the shore may be approached to 200 yards (182^m9). From Stephens Cove, the coast turns to the southwest, gradually shoaling as the beach at the head of the bay is reached, and should not be approached nearer than a quarter of a mile.

Fanny Island is situated southward of the usual anchorage under the town 15 of Manitowaning. Its north, northeast, and northwest sides are fairly steep-to, but shoal water joins its southern extremity to Narrow Point on the main shore.

Narrow Point is situated 250 yards (228^m5) southward of Fanny Island, and half a mile northward from the western end of the beach at the head of the bay, and should receive a berth of 200 yards (182^m9). 20

Manitowaning Harbour.—The southern portion of the bight formed between Narrow Point and the town wharves is shallow, but as the latter are approached the water deepens, and good anchorage may be obtained between them and Fanny Island, in 3 to 5 fathoms (5^m5 to 9^m1) mud, the nearer the town the better the shelter. Although vessels anchor for convenience near the town, 25 the whole space southward of the line joining the lighthouse and Mocassets Landing may be considered one excellent harbour, anchorage being obtainable in any depth under 10 fathoms (18^m3).

Wharves.—On **Town Point** is the Manitoulin Rolling mill and on the southwest side of the point is the Burns wharf, 150 feet (45^m7) long, with a depth 30 of 16 to 10 feet (4^m9 to 3^m0) alongside. The Government wharf is 280 feet (85^m3) long and 60 feet (18^m3) wide with berths on both sides 180 feet (54^m9) in length dredged to a depth of 20 $\frac{1}{2}$ feet (6^m3); the berth on the northeast side is 80 feet (24^m4) wide and the other 35 feet (10^m7). Town Point is steep-to.

Gibraltar Cliff is the name given to a rather remarkable rocky bluff, a little 35 over half a mile from the beach at the head of the bay, and as this cliff is just in sight when on Phipps Point shoal, care should be taken when approaching or leaving Manitowaning that it is well open of the eastern shore.

Light.—A *fixed green* light is exhibited, at an elevation of 80 feet (24^m4), from a white, square wooden structure on a hill in Manitowaning village. 40

The Rock is a hill, 166 feet (50^m6) high, half a mile westward of the town, and which serves as a leading mark to clear Loon Island Reef hereafter alluded to.

From Town Point, the west shore of the bay trends in a northwesterly direction $2\frac{1}{4}$ miles to **Springer Brook**, and is steep-to. Hence the coast runs north $2\frac{1}{2}$ miles with the same character to **Francis Brook**. 45

Chart 2286.

Sandy Point (Lat. $45^{\circ} 50' N.$, Long. $81^{\circ} 50' W.$), is steep-to. It is $2\frac{1}{3}$ miles northward from Francis Brook and the same distance southward from Ten Mile Point.

5 Fronting the coast embraced by Francis Brook and Sandy Point is a shoal, rocky flat, called **Francis Bank**, which, at a little over three-quarters of a mile northward of Francis Brook extends a third of a mile from the shore. To avoid Francis Bank, keep the whole of Heywood Island well open of the western shore of the bay, the latter bearing 008° .

10 **Ten Mile Point**, the western entrance point of Manitowaning Bay, derives its name from being about that distance from the town of Manitowaning. The coast between Sandy and Ten Mile Points may be approached to 250 yards (228^m5).

Ten Mile Shoal extends northward a third of a mile from the point of that name, at which distance there is a depth of 11 feet (3^m4). South Point of Strawberry Island open northeast of King William Island half the breadth of the latter, bearing 300° , leads north of Ten Mile Shoal.

Five Fathom Patch, with $5\frac{1}{4}$ fathoms (9^m5) on it, lies $1\frac{1}{2}$ miles eastward from the nearest part of Ten Mile Point.

20 **Sheguindah Bay** is a large indentation between Manitowaning Bay and Little Current. East Point of Strawberry Island and Ten Mile Point, $4\frac{3}{4}$ miles apart, may be considered its north and south points, respectively.

Loon Island, low and wooded, and small, is situated $1\frac{1}{3}$ miles northwestward from Ten Mile Point. From the south point, a shoal extends southward 25 a quarter of a mile, its other sides being fairly steep-to.

Loon Island Reef, with 6 feet (1^m8) of water on it, is a dangerous obstruction, lying one mile eastward of Loon Island.

Buoy.—A black spar buoy is moored in 5 fathoms (5^m5), northeastward of this reef.

30 **Clearing marks**.—To pass east of Loon Island Reef keep the southeast fall of Cloche Bluff in line with the west point of Heywood Island, bearing 014° , but as this mark leads only 275 yards (251^m4) eastward of the reef care should be taken not to open the bluff the least amount. To pass 200 yards (182^m9) westward of the reef, keep The Rock (Manitowaning) in line or closed with Ten Mile 35 Point, bearing 181° .

From the south, it should not be approached nearer than the line of the south extremes of King William and Loon Islands in one, bearing 276° . To lead northward of the reef keep the foot of Sheguindah Hill in line with South Point of Strawberry Island, on the last bearing.

40 **McGregor Bank**, a third of a mile long northeast and southwest, and 300 yards (274^m3) broad, with least water 9 feet (2^m7), lies three-quarters of a mile westward from Loon Island; the line joining the south points of Loon and King William Islands passes through its south extremity.

45 The leading mark previously mentioned, viz., South Point of Strawberry Island open northeast of King William Island half the breadth of the latter, bearing 300° , leads southwest of McGregor Bank and the shoal water from the South Point of Loon Island before alluded to.

Chart 2286.

Boulton Reef, with 9 feet (2^m7) of water over it, lies 300 yards (274^m3) northwestward of McGregor Bank, with its north extreme northeastward, three-quarters of a mile from the north point of King William Island. The foot of Sheguindah Hill in line with South Point of Strawberry Island, bearing 276° , leads 200 yards (182^m9) northward of Boulton Reef. 5

At night, Sheguindah leading lights in line, bearing 262° , lead the same distance north of Boulton Reef.

Buoy.—A black spar buoy is moored on the northern edge of Boulton Reef.

King William Island, small, quite narrow, low and wooded, is distant $1\frac{2}{3}$ 10 miles westward from Loon Island. It is almost joined to the south shore of the bay by a narrow bar, with 7 to 9 feet (2^m1 to 2^m7) of water over it, and 15 feet (4^m6) may be carried through by keeping nearer the south shore, but the passage is too narrow to be attempted by strangers. The east side of the island is shoal for 150 yards (137^m2), and a rocky spit, with 7 feet (2^m1) water on it, extends 250 15 yards (228^m5) from its north extreme, to clear which keep the north end of Rabbit Island (when visible) in line with the north point of Loon Island, bearing 103° .

Leech Island is the name given to a narrow bank of stones thickly wooded and separated from the south shore of Sheguindah Bay by a rushy boat channel; it is distant one mile southwestward from King William Island. 20

The coast between Ten Mile Point and Leech Island consists of several slight indentations, having at an average distance of 200 yards (182^m9) a depth of 12 feet (3^m7). A steep clay cliff, over 200 feet (61^m0) in height, follows along this coast at a distance back of about a quarter of a mile.

Leech Island Reef extends northeastward from the island of that name, 25 half a mile, at which distance the depth of 17 feet (5^m2) will be found, rapidly shoaling toward the island. The north points of Loon and King William Islands in line, bearing 095° , lead northward of this reef. At night, Sheguindah leading lights in line, bearing 262° , lead north of the reef.

Buoy.—A black spar buoy is moored northwest of the tip of Leech Island 30 Reef.

Sims Point is situated half a mile westward from Leech Island, and may be approached to within 150 yards (137^m2).

Between Sims Point and Sheguindah River the coast gradually curves, forming the head of Sheguindah Bay, which heavy draught vessels should not 35 approach nearer than a quarter of a mile.

Sheguindah.—This village contains a post office, United and Anglican churches. Steamers between the southeastern ports of Georgian Bay and Sault Ste. Marie stop here when there is occasion. It is connected by telephone with Little Current and the other villages on the island. 40

Wharf.—The Government wharf at the village is $103\frac{1}{2}$ feet (31^m5) long and in the berth alongside is a depth of $12\frac{1}{2}$ feet (3^m8).

Leading lights.—Two *fixed white* leading lights are exhibited. The front light is exhibited, at an elevation of 23 feet (7^m0), from a white mast with white, diamond-shaped daymark, on the outer end of the Government wharf at 45 Sheguindah; the rear light is exhibited, at an elevation of 35 feet (10^m7), from a similar structure, $261\frac{1}{2}^\circ$, 950 feet (289^m5) from the front light.

Chart 2286.

These lights in line lead to the wharf northward of all the shoals just described, and south of those from Strawberry Island. The available depth in the channel is 24 feet (7^m3) (1944).

- 5 These daymarks being difficult to see in the afternoon, the wharf shed under the middle of a table-shaped hill a couple of miles back is a fair substitute.

Frost Point (Lat. 45° 54' N., Long. 81° 54' W.) (which with Sims Point before mentioned may be said to enclose the head of the bay) is 1¼ miles north-eastward of the wharf; and the depth of 3 fathoms (5^m5) will be found 150 yards (137^m2) south and east of the point; hence to the wharf, the shoal water gradually extends further out.

15 Immediately northward of Frost Point is the wharf of the Canadian Silica Corporation, whose quarries are located near Sheguindah. The wharf consists of three floating platforms, the centre one at the end of the stone filled approach, and the ones at either end, being moored to pile clusters. A berth of 400 feet (121^m9) is provided, dredged to a depth of 19½ feet (5^m9) (below 578·5). The approach channel, 150 feet (45^m7) wide and 400 feet (121^m9) long, and a turning basin with a radius of 450 feet (137^m2), centred on the middle float, were dredged to the same depth in 1948.

20 **Strawberry Island** is 5 miles long in a nearly north and south direction, with a maximum breadth of 2 miles near the middle. Its coastline is indented by numerous large coves; its southeast side will only, however, at present be described as forming part of the northwest shore of Sheguindah Bay.

25 **South Point** is the most southerly extremity of the island, situated north-westward 2¾ miles from Loon Island. The depth of 16 feet (4^m9) will be found 350 yards (320^m0) south of the point, and 15 feet (4^m6) at 150 yards (137^m2), and a vessel will pass south of this bank by keeping Sheguindah leading lights in line, bearing 262°. From South Point, the southeast shore of Strawberry Island trends in a general northeast direction 3¼ miles to East Point which lies a little
30 over two miles westerly from Oxley Point (Heywood Island).

Buoy.—A red spar buoy is moored off South Point.

Whites Cove, shallow and full of rushes, is situated a little over three-quarters of a mile northeast from South Point; shoal water extends from its mouth nearly 300 yards (274^m3).

35 **Beaver Island**, with its south end situated 1½ miles northeastward from South Point, is a very narrow island two-thirds of a mile long in a northerly direction, and 325 yards (297^m2) wide near its north end, low and thickly wooded. Its eastern shore may be approached to 200 yards (182^m9), but from the sharp south extremity shoal water extends in a southwesterly direction under the name
40 of **Beaver Island Bank**, nearly two-thirds of a mile, with depths varying from 15 to 18 feet (4^m6 to 5^m5).

Buoy.—A red spar buoy is moored about 3 cables south of Beaver Island Bank, and close northward of the line of Sheguindah leading lights.

45 **Beaver Island Harbour** is formed by Beaver Island on the east, and the large bight in Strawberry Island on the west. It is entered from the southwest and anchorage in 3 to 3½ fathoms (5^m5 to 6^m4) may be obtained with the south point of the island touching Ten Mile Point, and the north point of Beaver Island in line with the southern part of East Point. A bar, with 9 to 10 feet (2^m7 to 3^m0) of water on it, joins the north end of Beaver Island to Strawberry Island.

Chart 2286.

Directions.—If from Georgian Bay, when westward of Centre Island Bank steer 264° , with **Sheguindah Hill** a trifle on the starboard bow for 8 ($7\frac{1}{4}$ nautical) miles or, until Loon Island is on the port beam distant three-quarters of a mile. The Sheguindah leading light should now be picked up (see page 277), and steered for, bearing 262° . 5

From Manitowaning, by day, a vessel when abreast of Ten Mile Point may bring South Point (Strawberry Island) open northeast of King William Island half the breadth of the latter, bearing 300° , which will lead between all the above-mentioned shoals. Pass north of King William Island giving it a berth of a quarter of a mile. The Sheguindah leading lights should then be brought in line and steered for, bearing 262° . 10

From Little Current, pass eastward of Strawberry Island, steering for Loon Island, until the Sheguindah leading lights are in line, bearing 262° , when keep them south of the wharf. A stranger, unless of very light draught, should not pass westward of Strawberry Island. (*Directions for such craft are given on page 287*). 15

East Point, the most easterly point of Strawberry Island may be approached to 200 yards (182^m9). A rocky bank, with 4 to $4\frac{1}{2}$ fathoms (7^m3 to 8^m2) over it, extends one mile easterly and two-thirds of a mile southeasterly from the point; deep water comes close in on the northeast side. 20

Light.—Fog signal.—A *fixed white* light is exhibited, at an elevation of 40 feet (12^m2), from a white, square tower on the northern extremity of Strawberry Island.

A hand fog-horn replies to vessels signals. 25

Coast.—The northeast coast of Strawberry Island between East Point and the lighthouse, $2\frac{3}{4}$ miles apart, is indented by three shallow coves; the nearest one to East Point being named **Bowell**, the middle one **Chapleau**, and the northern **Plummer** which almost joins the water on the west side of the island.

Langevin Rock, with 11 feet (3^m4) of water on it, is the termination of a reef with less than 3 fathoms (5^m5) of water over it, which extends a third of a mile northerly from the east entrance point of Bowell Cove. To clear this patch, keep the whole of Loon Island open east of East Point of Strawberry Island, the latter bearing 178° . 30

Chapleau Point, the north point of the cove of that name, is one mile northwest from East Point, and may be approached from the east to 150 yards (137^m2). 35

Caron Point is an anvil-shaped point situated a little over three-quarters of a mile southward of the lighthouse. To the southeast, shoal water extends a quarter of a mile, while eastward from Caron Point, rocky ground stretches nearly half a mile out under the name of Caron Reef. 40

Caron Reef.—This reef has depths on it varying from 9 feet (2^m7) on the inner, to 17 feet (5^m2) on the outer part.

Light-buoy.—A black light-buoy, showing a *flashing white* light, is moored in 5 fathoms (9^m1) on the eastern extreme of this reef. 45

Clearing marks.—To pass eastward of it, keep the east side of Loon Island open of East Point of Strawberry Island, bearing 177° . The north point of Beauty Island in line with Strawberry Island lighthouse, bearing 298° , leads northeastward of the reef.

Chart 2286.

Camp Cove, the second indentation southeastward of the lighthouse, is one-third of a mile distant from the latter. A vessel communicating with the lighthouse may find excellent anchorage here in 3 to 4 fathoms (5^m5 to 7^m3) over clay.

Strawberry Island Channel is the passage westward of the island of that name and a depth of over 20 feet (6^m1) can be carried through. The channel, however, in its present unbuoyed state is not recommended, even with the directions given on page 287, to any but very light draught craft.

10 **Coast.**—From Strawberry Island lighthouse, the west coast trends first in a southwest direction a third of a mile and is steep-to; thence, southeastward three-quarters of a mile, forming an extensive but shallow bay known as **Melvin Bight**. **Gow Point** (*Lat.* $45^{\circ} 57' N.$, *Long.* $81^{\circ} 53' W.$), is the narrow southwest projection of the coast extending southwestward $1\frac{1}{3}$ miles from the southern point of Melvin Bight. From the coast, embraced between the southwest part of the lighthouse point and Gow Point, shallow water extends a long way off.

20 **Middle Bank**, as the outermost portion of this bank is called, has 12 feet (3^m7) of water, and at low stages there may be 6 feet (1^m8) less, near its northern extremity, situated nearly $1\frac{1}{4}$ miles southwesterly from Strawberry Island lighthouse, and easterly a little over half a mile from Long Point on the Manitoulin Island shore. The leading lights on Gibbon Point in line, bearing 258° , lead north of this bank.

Gow Shoal, with 13 feet (4^m0) of water on it, lies three-quarters of a mile northwestward from Gow Point.

25 **Long Point** is a remarkably narrow peninsula, three-quarters of a mile long, with its outer and northeast extreme situated nearly $1\frac{1}{4}$ miles northward from Thompson Point; the shore of the bight between them should not be approached west of the line joining these points, midway between which is a group of stones 2 feet (0^m6) high, and sunken rocks. A narrow shoal spit makes out from the extremity of this point in the continued direction of the latter, 200 yards (182^m9).

35 **Thompson Point**, on the Manitoulin Island shore, is situated over $2\frac{3}{4}$ miles northward from Frost Point, the coast consisting of a double curve from the middle portion of which shoal water extends two-thirds of a mile. The western edge of Strawberry Island Channel is distant a third of a mile from the southwest part of Thompson Point, 100 yards (91^m4) from which there is a small islet, but the deep water approaches the narrow north extreme of the point within 150 yards (137^m2).

40 **Costigan Point** is situated rather more than three-quarters of a mile southward of Gow Point, the coast between them forming a long and shallow bight. The remainder of the coast of Strawberry Island trends from Costigan Point in a general southerly direction 2 miles to South Point, the termination of the island. For $1\frac{1}{4}$ miles from Costigan Point, the 3-fathom (5^m5) line skirts the shore at a distance of 300 yards (274^m3), and, as South Point is approached, the deep water comes a little closer in, the same depth being found 200 yards (182^m9) west of South Point.

50 **Snake Island**, 33 feet (10^m1) high, lies a quarter of a mile northwest of South Point, being a quarter of a mile long by 200 yards (182^m9) broad, and joined to Frost Point on the Manitoulin shore by a bank over which not more than 6 feet (1^m8) of water can be carried. Shallow water extends over a quarter of a mile northward from Snake Island, but deep water approaches the east side to within 100 yards (91^m4).

Chart 2286.

Gibbons Point, which may be called the south entrance point to Little Current (*see* also page 283) from the east, is situated over one mile northwestward from Long Point; and nearly midway in the deep bight between them and 300 yards (274^m3) from the shore is a low wooded islet. The shore between Long and Gibbons Points should not be approached nearer than a quarter of a mile. 5

Leading Lights.—Two *fixed green* leading lights are exhibited about half a mile southward of Gibbons Point. The front light, is exhibited, at an elevation of 30 feet (9^m1), from a steel lattice tower, with a white, diamond-shaped daymark with a black vertical stripe; the rear light is exhibited, at an elevation of 38 feet (11^m6), from a white, square slatted daymark with triangular top and black vertical stripe, 350 feet (106^m7), 258° from the front light. 10

These lights in line, bearing 258°, lead from north of Strawberry Island to the intersection of their alignment with that of the Goat Island range.

Buoy.—On the alignment of the leading lights, and 1 $\frac{7}{8}$ miles from the front light, is moored a black spar buoy, marking a shoal with a least depth of 19 feet (5^m8). Vessels of heavy draught must leave the line of range and pass north of this buoy. 15

Chart 2294.

Gibbons Bank.—**Buoys.**—A rocky bank, with 10 $\frac{1}{2}$ feet (3^m2) least water on it, extends 200 yards (182^m9) northeastward from Gibbons Point. Through this bank has been cut a channel with a limiting depth of 20 feet (6^m1) and 165 feet (50^m3) wide. Three black and three red spar buoys indicate the channel at this point. A red steel float, surmounted by a *flashing red* light, is moored immediately northward of the intersection of the Gibbons Point and Goat Island ranges and just southward of a shoal with a least depth of 17 $\frac{1}{2}$ feet (5^m3). 20 25

Chart 2286.

South Coast of Cloche Islands.—The southeastern portion is known as **Little Cloche Island**, being divided from **Great Cloche Island** by a narrow boat channel named **Southwest Gut**, through which there is a perceptible current. Little Cloche Island is nearly 3 miles long in a northerly direction and over 1 $\frac{3}{4}$ miles in greatest diameter, its low southeastern extremity being known as Mary Point. 30

Dinner Point is on the east shore of Little Cloche Island, about one mile north of Mary Point. There is a small island and several rocks lying off Dinner Point. 35

Mary Point, which may be called the western entrance point of Frazer Bay, is situated 3 $\frac{3}{8}$ miles northwestward from the west end of Partridge Island. It can be approached from the southeast to 300 yards (274^m3), but, from the coast a quarter of a mile northeastward of the point, shoal water extends eastward the latter distance, where there is a depth of 15 feet (4^m6). From Mary Point, shallow water extends southerly half a mile. 40

East Mary Island, low and wooded, and small, lies southwest two-thirds of a mile from Mary Point. Its north and east sides are steep-to, but a bank extends in a southerly direction half a mile, with depths varying from 9 to 18 feet (2^m7 to 5^m5). The west and southwest sides of this island should not be approached nearer than a quarter of a mile. 45

Chart 2286.

Buoy.—A red spar buoy is moored on the southeastern tip of the shoal extending southward from East Mary Island.

West Mary Island, low and less wooded than the last mentioned, has a maximum diameter in a northeast direction of half a mile. Like East Mary Island, its northeast, north, and northwest sides are steep-to, but from the south side and southwest point a rocky bank extends southeard a third of a mile, and southwestward three-quarters of a mile. A patch of stones, one foot (0^m3) high, lies a third of a mile southwesterly from the southwest point of West Mary Island. No natural features offer for a clearing mark for the banks south of the Mary Islands. A passage a quarter of a mile broad exists between the banks from these islands by keeping rather nearer East Mary Island.

A channel of the same breadth exists, between them and the shoal water from Little Cloche Island, by keeping the north sides of Mary Islands on board.

Wreck.—Buoy.—A red spar buoy marks the wreck of a barge, lying off the north side of West Mary Island.

Anchorage may be had, either in, or off the mouth of, the cove on the north side of West Mary Island.

From Mary Point, the southwest coast of Little Cloche Island trends in a general northwesterly direction 2 miles to the island in the entrance to Southwest Gut, on either side of which there is a passage for a boat. Shoal water extends from this coast for an average distance of over a third of a mile, and off the entrance to the gut the flat extends half a mile.

Cloche Bluff, 220 feet (67^m1) high, is a rocky hill on the southeast extremity of Cloche Peninsula, the southeast fall of which serves for clearing marks already given.

Stony Point (*Lat.* 45° 58' N., *Long.* 81° 48' W.), the most southerly point of Great Cloche Island, is the termination of a peninsula, a mile long and two-thirds of a mile broad, situated 3 miles westward of Mary Point and a little over 2 miles eastward of Strawberry Island lighthouse. As the name indicates scattered boulders lie off the shore for 100 yards (91^m4), and a shallow rocky bank extends southward a third of a mile.

Shoal Bight, as the bay between Southwest Gut and Stony Point is called, is foul and shallow for more than half a mile. The east side of Stony Point itself, however, is fairly steep-to. A depth of 6 to 7 fathoms (11^m0 to 12^m8), with a breadth of three-quarters of a mile, will be found between the shoal water south of Stony Point and the bank from West Mary Island.

English Point, on Great Cloche Island, is situated 1½ miles northwest from Stony Point, and between them a very shallow cove runs in one-third of a mile. Shoal water fringes the shore an average distance of a quarter of a mile.

An isolated rocky bank, with 12 feet (3^m7) of water on it, is situated nearly midway between Stony Point and McKenzie Island.

McKenzie Island, 3 feet (0^m9) high, with a few small trees on it, lies north-eastward one mile from Strawberry Island lighthouse. A detached reef of stones, 2 feet (0^m6) high, lies northward a quarter of a mile from the island. From McKenzie Island, shoal water makes out 300 yards (274^m3) in a southerly direction. The east and west sides are fairly steep-to, leaving a channel, with 5 to 6 fathoms (9^m1 to 11^m0) of water, a third of a mile broad, between it and English Point, and another between it and Garden Island, nearly three-quarters of a mile wide, with a depth of 7 fathoms (12^m8).

Chart 2286.

Garden Island, as the barren limestone island 9 feet (2^m7) high, lying half a mile northward of Strawberry Island lighthouse, is rather inappropriately called, is nearly a third of a mile long by 250 yards (228^m5) broad. Its northeast, north, and northwest sides are steep-to. 5

Garden Island Bank, with 3 feet (0^m9) of water on its southeastern part, is a dangerous rocky flat extending from the south shore of Garden Island to within 350 yards (320^m0) of Strawberry Island lighthouse; but the northeast, north, and northwest sides of the island are steep-to.

Buoy.—Marking the southern edge of this bank and abreast of Strawberry Island lighthouse, a red spar buoy is moored in 4 fathoms (7^m3) of water. 10

The coast of Great Cloche Island, west of English Point, runs generally in a westerly direction as far as Beauty Island, and is indented by several rocky coves and inlets; and the whole coast is fringed with boulders and shallow sunken rocks. For 2 miles westward of English Point, a bank extends off from the coast an average distance of over one-third of a mile, while from this to Beauty Island there is a depth of only 12 feet (3^m7) at nearly a mile from the coast. 15

Chart 2294.

Beauty Island, elevated 70 or 80 feet (21^m3 or 24^m4) at its northern extremity, is situated northward of the eastern approach to Little Current, and northeastward about half a mile from Gibbons Point. It is that distance long east and west, by one-third of a mile wide, and lies 1½ miles northwestward from Strawberry Island lighthouse. It is separated from Goat Island on the west by a boat channel nearly 200 yards (182^m9) broad. Its southeast point is fairly steep-to, but from its southern shore a rocky bank extends over a quarter of a mile, which must be carefully guarded against by vessels approaching or leaving Little Current. 20 25

Little Current.—East entrance channel.—The shallow part of the channel entering Little Current from eastward and situated opposite Gibbons Point, was dredged to a depth of 22 feet (6^m7) in 1954. 30

Leading lights.—Two *fixed red* leading lights are exhibited on the south side of Goat Island, east of Malland Cove. The front light is exhibited, at an elevation of 24 feet (7^m3), from a lantern on a white, triangular daymark; the rear light is exhibited, at an elevation of 38 feet (11^m6), from a lantern on a white, square daymark 807 feet (245^m9), 317° from the front light. 35

These lights in line, bearing 317°, lead from the intersection of their alignment with Gibbons Point range, through the dredged cut, to the turn into Little Current.

Buoys.—Four red spar buoys and three black spar buoys mark the northeastern and southwestern sides, respectively, of the dredged cut. Two red spar buoys mark the northern side of the channel between Goat Island front leading light and the bridge. 40

From Gibbons Point, the southwest shore of Little Current trends northwesterly one-third of a mile to **Griffiths Point**, a bank, with depth under 18 feet (5^m5) extending therefrom 100 yards (91^m4). 45

From Griffiths Point, the shore trends northwesterly a little over a quarter of a mile to **Shutin Point** and the railway bridge, depths under 18 feet (5^m5) fringing it to a distance of 100 yards (91^m4).

Chart 2294.

Goat Island, $1\frac{1}{4}$ miles long and about one-third of a mile wide, forms the north side of Little Current channel. It lies in an east and west direction, at an average distance of 750 feet (228^{m5}) from Manitoulin Island shore.

- 5 **Bird Point** (*Lat.* $45^{\circ} 59' N.$, *Long.* $81^{\circ} 54' W.$), the southeast extremity of Goat Island, may be considered the north entrance point to Little Current from the east. It lies northeastward distant a little over a quarter of a mile from Gibbons Point, the south entrance point. Not more than 18 feet (5^{m5}) will be found 250 yards (228^{m5}) southward from the point; and, from the Goat Island
10 coast 250 yards (228^{m5}) westward of Bird Point, the bank under that depth makes out 270 yards (246^{m8}).

- From Bird Point, the south coast of Goat Island and north shore of Little Current trends westward half a mile, to a small and shallow indentation known as **Mallard Cove**, 300 yards (274^{m3}) west of which is the Goat Island end of the
15 railway bridge, and, near it, Turner railway station. The 3-fathom (5^{m5}) line is 300 feet (91^{m4}) southward from the entrance points of the cove.

- Bridge.**—On Shutin Point is erected the Manitoulin Island end of the Algoma Eastern Railway Co. swing bridge, which crosses the channel to Goat Island in a northeasterly direction, affording railway connection with the Cana-
20 dian Pacific (Sudbury and Sault Ste. Marie branch) at Espanola, distant about 37 miles from Little Current.

- The swing, when open, affords two passages, each 150 feet (45^{m7}), wide, one on each side of the swing, the northeastern passage being for vessels bound north-
west, and the other for those proceeding southeastward; in other words vessels
25 keep to starboard.

Bridge signals.—Lights.—Vessels ready to pass through the bridge will sound *three long* blasts on the whistle, and masters of vessels should not attempt to pass through until the swing is open.

- At night, a *white* light is shown on each abutment of the bridge, on each side
30 of the channel to be used, and also one *white* light from each end of the rest piers of the swing span. In addition to these lights, the swing span is surmounted by a lantern showing a *red* light when the bridge is closed, or a *green* light when the bridge is open and a vessel may pass. Pass between two *white* lights and to starboard of a *green* light.

- 35 **Caution.**—The stone pier for the support of the swing, when it is open, does not lie parallel to the axis of the current, so that vessels have the latter $1\frac{1}{4}$ points on the bow, which, when strong, must be guarded against. (*see page 286.*)

Cable.—An overhead transmission line with a clearance of 141 feet (43^{m0}) crosses the channel close eastward of the bridge.

- 40 Rather more than half a mile westward from the bridge is the west extreme of Goat Island, known as **Magazine Point**, and between Mallard Cove and the bridge a bank, with less than 18 feet (5^{m5}), extends out about 100 yards (91^{m4}).

- Canadian Pacific Railway wharf.**—Between Magazine Point and the bridge are situated the coal unloading and commercial wharves of the Canadian
45 Pacific Railway (Algoma Eastern branch), with a continuous length of 1,570 feet (478^{m5}) parallel to the channel. The depth alongside is 22 feet (6^{m7}), with the exception of a spot near each end of 21 feet (6^{m4}). The deep water runs in straight line from the outer end of the Goat Island abutment of the railway bridge to a point opposite the western end of the Canadian Pacific Railway wharf.

- 50 There is a depth of 19 feet (5^{m8}), about 60 yards (54^{m9}) south of the middle of the wharf.

Chart 2294.

A submarine power cable crosses the channel from a point just west of the Canadian Pacific Railway wharf to a point west of the town power house; warning signs are displayed at each end of the cable.

Little Current.—This town, with a population of 1,397 in 1951, occupies an important position on the Manitoulin Island side of a narrow passage, in which there is a considerable current at times—hence its name—and through which all vessels must pass using this part of North Channel of Lake Huron. 5

Between the northern part of the town and Magazine Point is a rocky bar nearly 300 yards (274^m3) broad, across which a channel has been dredged to a depth of 20 feet (6^m1). 10

Little Current is noted as a headquarters for yachtsmen, tourists, and sportsmen. It is in the midst of a diversified and extensive cruising district and from it access is had to many landlocked waterways, McBean Channel, Whitefish Bay, Finn Bay, Frazer Bay, Badgeley Channel, Killarney and Collins inlet, whose waters are studded with islands and intercepted by waterways, which in the main can be reached only by boat, as described elsewhere in this volume. 15

Communications.—Industries, etc.—As above indicated, the town has railway communication with the rest of Canada by the Canadian Pacific Railway, Algoma Eastern Branch, and frequent steamboat connection with the southeast points of Georgian Bay and Sault Ste. Marie. 20

A motor highway leads from Espanola, on the Sault Ste. Marie-Sudbury highway, by way of Cloche Peninsula and Great Cloche Islands, to the ferry landing across the channel from Little Current.

Coal, gasoline, and other supplies can be obtained. The coal unloading wharf at Goat Island with its high, conspicuous steel crane and transporting bridge has storage for 700,000 tons of coal. Little Current is a Customs port of entry. 25

Marine Railway.—Repairs to small craft can be made by the Kerr Boat Works, who operate a small marine railway. The cradle is 45 feet (13^m7) long 18 feet (5^m5) wide, and can take a vessel of 5·5-foot (1^m6) draught. 30

Wharves.—A concrete wharf, called Town or Turner wharf, with a berthing length of 280 feet (85^m3) and depth alongside of 23 feet (7^m0), in the middle portion, and having a warehouse, and Customs office on it, is situated on the south side of the channel at Little Current. Timber extensions to the wharf extend 84 feet (25^m6) to the westward and 156 feet (47^m5) to the eastward of the concrete portion. 35

A wharf 200 feet (61^m0) long, 16 feet (4^m9) wide, with about 7 feet (2^m1) of water alongside lies eastward of the main wharf. A Government wharf 120 feet (36^m6) long, with a depth of 10 feet (3^m0) alongside, lies to the west of the town wharf. A small boat wharf adjoins it to the westward. 40

Buoy.—Two black spar buoys are moored on the south side of the channel opposite the coal wharf.

Light.—A *fixed green* light is shown, at a height of 25 feet (7^m6), from the northwest corner of the warehouse on Town Wharf. 45

Spider Island.—From the light, the town shore trends northward, with a curve, a quarter of a mile to the southeast point of Spider Island, which is low, flat, 250 yards (228^m5) in length, and about 140 yards (128^m0) in breadth.

Chart 2294.

Light.—On this southeast point is erected a white square tower, which at a height of 40 feet (12^m2), exhibits a *flashing white* light, visible 7 (6 nautical) miles. This light is unwatched.

5 **Buoys.**—The edge of the dredged cut westward of Magazine Point is marked on the northeastern side by a red light-buoy showing a *flashing red* light, and a red conical buoy; two black spar buoys mark the western side of the cut. A red spar is moored on the north side of the channel, 450 yards (411^m5) north of Spider Island light.

10 **Current.**—The current varies both in direction and velocity, sometimes running as much as four miles per hour. Sufficient power and a careful helmsman are required when the current is contrary, particularly when in the vicinity of the swing bridge and in the sharply curved west entrance channel.

Low Island, about a third of a mile in diameter, lies next west of Spider Island, being separated therefrom by a shallow channel. The rocky patch that used to lie 80 yards (73^m2) off the north point has been removed, the dredged channel passing close to this point, the edges of which are marked by red and black spar buoys, respectively. A black spar and a red spar are moored about 200 feet (61^m0) and 1,000 feet (304^m8), respectively, northeastward of the north-
20 east point of Low Island.

Picnic Island lies 250 yards (228^m5) westward from Low Island, and has an average diameter of one-third of a mile. The northeast side of Picnic Island is steep-to.

25 **Light.**—A *flashing green* light is shown, at an elevation of 31 feet (9^m4), from a lantern on a white mast with white daymark and white shed at its base, on the northwest point of Picnic Island.

Dredged channel.—Buoys.—Most of the shoals close northward of Low and Picnic Islands have been removed. The channel, 300 feet (91^m4) in width, with a least depth of 21 feet (6^m4) and bearing 288°, passes less than 100 feet
30 (91^m4) from the north extremes of the two islands; abreast the northern point of Low Island it is marked by a red conical buoy, fitted with reflector bands, on the north side and a black spar buoy on the south side. At the northern point of Picnic Island, a red light-buoy, showing a *flashing red* light, marks the north side of the channel and a black spar the south side. Two additional red spar buoys
35 are moored on the north side of the channel, opposite Picnic Island.

The dredged channel follows closely the northwest side of Picnic Island. This part of it trends nearly 270°, and is marked by two red and one black spar buoys.

40 Westward of Picnic Island the rapidly widening channel is over 5 fathoms (9^m1) deep, with one spot of 20 feet (6^m1), lying about 1,900 feet (579^m1) eastward of Narrow Island.

An islet, 4 feet (1^m2) high with stones about it, lies a quarter of a mile southwesterly from the northwest point of Picnic Island, and from its northwest side shoal water extends 150 yards (137^m2).

45 **Narrow Island** (*Lat.* 45° 59' N., *Long.* 81° 59' W.), is over one-third of a mile long east and west, and narrow. The lighthouse on the northwest point of this island, bears 269°, and is distant nearly 1½ miles, from the corresponding extremity of Picnic Island, and no vessel of heavy draught should go southward of this line. A rocky bank, with depth under 18 feet (5^m5) extends 150 yards (137^m2)

Chart 2294.

from the whole of the north side of Narrow Island, Narrow Island light is important as marking the south entrance point of the western approach to Little Current, and, unlike Flat Island on the opposite side, the north shore of Narrow Island may be approached to 200 yards (182^m9).

5

Light.—Fog signal.—A *fixed white* light, with a *red* sector from 075°, through east, to 092°, is exhibited, at an elevation of 36 feet (11^m0), from a white, rectangular structure, on the northwestern side of Narrow Island.

A hand fog-horn answers vessels' signals.

Buoy.—A black spar buoy is moored in 40 feet (12^m2) of water, marking the extreme of the shoal water extending about one cable northward from Narrow Island light.

10

Two rocks, with 3 and 4 feet (0^m9 and 1^m2) of water on them, lie a quarter of a mile westward of Narrow Island lighthouse, and to lead north of these dangers the whole of Picnic Island should be kept open northward of Narrow Island, bearing 103°.

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Charts 2286, 2294.

Directions.—From Manitowaning, after passing Phipps Point Shoal by the leading mark given on page 274, and Loon Island Reef by either of those given on page 276, give East Point of Strawberry Island a berth of a quarter of a mile, taking care as Langevin Rock and Caron Reef are approached to have the whole of Loon Island open of East Point, the latter bearing 178°, to clear the first while the east side of the island in sight, bearing 177°, is sufficient to lead northeast of Caron Reef, marked by a black spar buoy.

20

A vessel may haul westward when the north extreme of Beauty Island appears in sight touching Strawberry Island lighthouse, bearing 298°. The light should be rounded fairly close to avoid Garden Island Bank, marked by a red spar buoy, and the leading lights southward of Gibbons Point brought into line, bearing 258°. Proceed on this range, deep-draught vessels passing northward of the black spar buoy, moored one-half of a mile westward of the lighthouse, to its intersection with the Little Current east entrance range. The red light-buoy, marking the southern extreme of the shoal south of Beauty Island, is moored just northward of this intersection and should be left on the starboard hand. Alter course northward and bring the Goat Island leading lights in line bearing 317°, passing through the middle of the dredged cut off Gibbons Point, in 20 feet (6^m1) of water at the surface elevation of 578·5 feet above mean tide at New York. Shortly after clearing the spar buoys marking the north end of the dredged cut, haul up for the swing bridge and pass through as directed on page 284. When west of it, steer for the town wharf, from which haul sharply northward through the dredged channel until 100 yards (91^m4) northward of Spider Island lighthouse, when a vessel may haul westward, to pass 150 yards (137^m2) northward from the north point of Low Island.

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From the east, after passing southward of Centre Island Bank by the clearing marks given on page 260, steer to pass a quarter of a mile from Wharton Point (the southwest extreme of Heywood Island), whence haul northward, steering 323°. As Caron Reef is approached, follow the direction already given from Manitowaning.

45

By Strawberry Island Channel in light-draught vessels, having cleared the several shoals in Sheguindah Bay by the clearing marks and line of leading lights given on page 277, round South Point of Strawberry Island a quarter of a

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Chart 2294.

- mile distant, and bring Gow Point in line with the east side of Snake Island bearing 010° , which marks will lead close west of the bank from South Point. Pass 150 to 200 yards (137^m2 to 182^m9) east of Snake Island, and bring South
 5 Point in line astern with the west side of Leech Island, bearing 184° , which leading mark leads in not less than 20 feet (6^m1), until north of Thompson Point.

- When the west low extremity of Beauty Island is in line with Long Point, bearing 341° , steer for it, taking care on nearing Long Point, to have the east side of Snake Island open east of Thompson Point, bearing 181° , to clear the spit from
 10 Long Point. Thence steer for Goat Island leading lights and proceed as before directed (*see above*).

- Coast.—Goat Island Channel**, situated north of Goat Island, is crossed by Canadian Pacific Railway, Algoma Eastern branch; eastward of the bridge it is not safe for boats. The water area west of the railway bridge is accessible
 15 only to small boats, due to a fill and low bridge with about 6-foot (1^m8) clearance, which joins Goat and Great Cloche Islands near the western end of this channel.

- Southwest shore of Great Cloche Island.**—From Goat Island Channel, the coast of Great Cloche Island trends northward in a series of long and shallow bights, fronted by **Maltas, Patten**, and other islands and rocks, a little
 20 more than $2\frac{1}{2}$ miles to **Flat Island**, which may be looked upon as really the southwest extremity of Great Cloche Island. The whole of this shore is shallow for a long way out, and should be carefully avoided, by keeping the islands on the Manitoulin shore on board. To lead southward of that portion of the bank westward of Picnic Island, a vessel should, after coming out of the dredged
 25 channel north of Low Island, bring the north end of Low Island in line with or keep it hidden behind the north extremity of Picnic Island, bearing 108° .

Buoy.—A red spar buoy is moored on the edge of the 5-fathom (9^m1) line, one-quarter of a mile southwestward of Flat Island.

- The Manitoulin shore** inside Low and Picnic Islands trends in a general
 30 westerly direction nearly $1\frac{1}{2}$ miles to **Miller Point** forming a sheltered bight, in which craft, drawing less than 9 feet (2^m7), may find good anchorage, by entering between Miller Point and the islet 4 feet (1^m2) high, alluded to on page 286.

- Mackay Point** (*Lat. $45^\circ 59' N.$, Long. $81^\circ 59' W.$*) is situated a little over three-quarters of a mile westward of Miller Point and nearly a third of a mile
 35 southward from Narrow Island lighthouse; the channel between them being fit only for boats. From MacKay Point, the shore turns abruptly southwestward, and runs in that direction $1\frac{1}{2}$ miles to a little indentation sheltered from the westward and known as **Turner Cove**.

Chart 2286.

- 40 From Turner Cove, the shore runs fairly straight southwesterly nearly 3 miles to **Freer Point**, and, although not dangerously shallow is so shelving that a vessel, drawing 12 feet (3^m7) of water, should not approach nearer than a quarter of a mile.

- West Bay** is $8\frac{1}{4}$ miles long, the breadth between Wabos Island on the east
 45 and Francis Point on the west being $6\frac{1}{4}$ ($5\frac{1}{2}$ nautical) miles, and, like Manitouwaning Bay, is a fine sheet of water with very few dangers. As much as 32 fathoms (58^m5) of water will be found in the middle of the bay, and more than 20 fathoms (36^m6) within 100 yards (91^m4) of the east shore of the southern part. Anchorage may be had at the head of the bay in 6 to 8 fathoms (11^m0 to 14^m6)
 50 over mud.

Chart 2286.

West Bay Village, an Indian village of about three hundred families, is situated at the head of the bay. There is a Government wharf 110 feet (33^m5) long, with a depth of 14 feet (4^m3) alongside. A freight shed on shore adjoins the inner end of the wharf. Freight and passenger boats make this place a port of call. 5

Mindemoya Lake lies inland a few miles, southward from the head of West Bay.

Wabos Island lies three-quarters of a mile west of Freer Point, and forms the east entrance point of West Bay. It is low, narrow and wooded, and a quarter of a mile long in a northeasterly direction. Its northwest coast may be approached to within 100 yards (91^m4), but from its southwest end a shoal makes off in the same direction half a mile. In addition to this, an extensive flat connects it with Freer Point and the shore 1½ miles southwestward of Freer Point. 10

Wabosons Island is a low, wooded, islet a quarter of a mile eastward of Wabos Island, and between them there is a passage, through which 16 feet (4^m9) can be carried, by keeping the southeast point of Mink Island (near East Rous Island) midway between Wabos and Wabosons Islands, bearing 051°. Sunken rocks and dry stones connect Wabosons Island with Freer Point, and from the latter the coast trends in a general southwesterly direction 4½ miles to Tamarack Point, and off which coast a vessel may obtain temporary anchorage, in 8 to 5 fathoms (14^m6 to 9^m1), sand and mud. 15 20

Tamarack Point, the southern part of which is 5¼ miles from the head of West Bay, may be coasted at the distance of 150 yards (137^m2).

From the south part of Tamarack Point, the coast turns abruptly eastward forming a bay known as **Sounding Cove**, in which vessels may find good shelter from northerly gales, in from 5 to 7 fathoms (9^m1 to 12^m8) over mud, by not approaching the north shore of the cove nearer than 300 yards (274^m3). 25

Honora Village is small and situated upon the north shore of Sounding Cove. The Government wharf, 146 feet (44^m5) long, and protected from the southwest by an irregular shaped breakwater, has a depth of 7 feet (2^m1) at the outer end. The same depth will be found along the east side of the breakwater. 30

From Sounding Cove, the southeast shore of West Bay trends in a general southerly direction to the head, and is steep-to.

One mile from the Indian village, situated at the south end of West Bay, the west shore of the bay turns westward, forming a bight known as **Corbier Cove**, but which on account of its exposure to north winds and its deep water, does not afford a secure anchorage. From this cove, the western shore trends in a northerly direction, 1½ miles to **Honora Point**, under the southern hook of which is an excellent little boat harbour, into which 4 feet (1^m2) of water may be carried, by keeping close to the west shore (at low stages it would be dry). 35 40

Excelsior post office is situated on the west shore of West Bay, just southward of Corbier Cove.

Dutchmans Head is the name given to a steep bluff 180 feet (54^m9) high, 6¾ miles from the head of West Bay, and the whole shore between them may be approached to 200 yards (182^m9). At Dutchmans Head the coast turns abruptly westward, forming the southern shore of an extensive and shallow bight, in the southern part of which, however, a vessel may find shelter in westerly gales, in 4 to 7 fathoms (7^m3 to 12^m8) with the Tooth touching Francis Point, bearing 008°. 45

Chart 2286.

The Tooth is a small sharp rock, 3 feet (0^m9) high, situated nearly three-quarters of a mile northward of the shore under Dutchmans Head, and a third of a mile from the west shore of the bight; its east side should receive a berth of 5 150 yards (137^m2). From the Tooth, the bight continues foul to Francis Point.

Francis Point.—This is the name given to the narrow northeastern extremity of the promontory dividing West and Mudge Bays. It may be also considered as the south entrance point of Clapperton Channel from the east. The east side of the point is tolerably steep-to, but shallow water makes off the 10 extreme of the point a third of a mile in a northeasterly direction, and a little over a third of a mile northward, under the name of **Taché Island Reef**; care should therefore be taken in rounding the point to give it the necessary berth.

McRae Patch, with 3 $\frac{1}{4}$ (5^m8) fathoms over rock, lies 1.1 miles northeast from Francis Point.

15 **Taché Island** is the first island westward of Francis Point and is distant therefrom nearly a third of a mile; and from it, extends in a northeasterly direction nearly half a mile, a patch of dry and sunken rocks known as Taché Island Reef alluded to above.

20 **Gooseberry Island**, small, 5 feet (1^m5) high and quite narrow, is situated 1 $\frac{1}{4}$ miles northwestward from Francis Point; its north end should receive a berth of 200 yards (182^m9).

Light.—A *flashing white* light is shown, at an elevation of 35 feet (10^m7), from a lantern on a pole, on the northeast point of Gooseberry Island.

Chart 2287.

25 **Martin Reef** lies on the same bearing from Francis Point and is distant therefrom a little more than three-quarters of a mile. It is composed of dry stones, 2 feet (0^m6) high, and should not be approached from the north nearer than 300 yards (274^m3).

30 **Trudeau Point** lies a mile west of Francis Point, and from it the coast trends abruptly southwestward, forming the southeast shore of Mudge Bay. A good passage, a third of a mile broad, exists between Gooseberry Island on the west, and Trudeau Point and Martin Reef on the east, through which 3 $\frac{1}{2}$ fathoms (6^m4) can be carried, by keeping Lloyd's house at Kagawong its breadth open of the east shore of Mudge Bay, bearing 210°.

35 **Mudge Bay**, between Gooseberry Island and Maple Point, is 3 $\frac{1}{2}$ miles wide; it has about the same length, and the whole space with two exceptions hereafter mentioned, has a depth of 6 to 8 $\frac{1}{2}$ fathoms (11^m0 to 15^m5) over mud, making it one of the finest anchorages in North Channel of Lake Huron.

40 **Kagawong** is the name of a village situated near the stream in the south corner of the bay, 2 $\frac{3}{4}$ miles southwestward from Trudeau Point. Steamers running between Sault Ste. Marie and the southeast ports of Georgian Bay call here occasionally. It is also connected by telephone with Little Current and the other villages on the island.

45 **Wharves.**—There are two Government wharves at Kagawong. That on the west side of the bay is 152 feet (46^m3) long and 48 feet (14^m6) wide with a berth alongside, 120 feet (36^m6) in length, reported as dredged to a depth of 21

Chart 2287.

feet (6^m4), at the outer end is a depth of 25 feet (7^m6); it is connected by a tramway to a pulp-mill located 500 feet (152^m4) to the southeastward. The Government wharf on the east side is 120 feet (36^m6) long and in the berths alongside, 90 feet (27^m4) in length, is a depth of 13 feet (4^m0).

5

Light.—A *fixed red* light is shown, at an elevation of 38 feet (11^m6), from a white square tower with a red lantern, situated near the Government wharf on the west side of the bay.

Gray Point (*Lat. 45° 56' N., Long. 82° 17' W.*) is a slight projection on the west shore of the bay 2 $\frac{1}{4}$ miles northwestward from Kagawong

10

Sextant Point is situated nearly 2 miles north of Gray Point and has a cove on its northwest side. Between Gray and Sextant Points, a bank extends a quarter of a mile; all other shores of the bay may be approached to half that distance, except near Maple Point.

McInnes Bank, with 12 feet (3^m1) over it, lies northwestward nearly 1 $\frac{1}{4}$ miles from the north point of Gooseberry Island; it is composed of gravel, and is about 200 yards (182^m9) in diameter. Depths under 4 fathoms (7^m3) extend a quarter of a mile southwest and 200 yards (182^m9) northeast of the bank.

Buoy.—A red and black spar buoy, equipped with a reflector band, is moored in 21 feet (6^m4) of water, on the south side of McInnes Bank.

20

Sutherland Shoal, with 15 feet (4^m6) of water on it, lies nine-tenths of a mile northeast from Sextant Point, and half a mile southward from Little Island.

Maple Point is the promontory which may be considered the south entrance point of Clapperton Channel from the west. Its eastern portion is distant 1 $\frac{5}{8}$ miles from Sextant Point, in a northerly direction; about midway between these points is a small indentation known as **Sandy Cove**, south of which shoal water extends 350 yards (320^m0). From its eastern extremity, the shore of Maple Point trends half a mile northwesterly to its northern extremity, situated 1 $\frac{3}{4}$ miles southward from the south shore of Vankoughnet Island, southwesterly nearly one mile to Johnson Point, and thence the same distance to a slight point, whence **Burgess Reef**, consisting of dry stones, extends 250 yards (228^m5) northeastward.

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Buoys.—A black spar buoy marks the edge of the shoal water off Maple Point, and a red spar, moored 3 cables northeastward of the point, indicates the limit of shoal water extending towards Maple Point from Vankoughnet Island.

35

Maple Bluff, 262 feet (79^m9) in height, is the name given to the turning point of the high bank which follows the coast round from Mudge Bay to Gore Bay.

Little Island, 3 feet (0^m9) high, is the name given to a narrow wooded islet lying over a half mile southeast from the northeast extremity of Maple Point.

40

Little Island Bank is a large flat sandbank extending 1 $\frac{1}{2}$ miles east from the east side of Maple Point, at which distance there is 8 feet (2^m4) of water (in low stages there may be 6 feet (1^m8) less). This bank averages over half a mile in breadth and its southern edge extends 1 $\frac{3}{4}$ miles easterly from Sandy Cove; its northern edge is comparatively straight and may be avoided by keeping on the leading mark mentioned below. Between this bank and Boulder Bank (*see* page 300), and northward of the fairway leading mark, are four small, rocky

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Chart 2287.

patches, the least water on which is 10 feet (3^m0). The mark which leads south-west of Meredith Rock (*see* page 299) also clears the east end of Little Island Bank.

- 5 **Buoys.**—A black spar buoy is moored on the northeast point of Little Island Bank, and a similar buoy on the north edge of the bank. A red spar buoy is moored about one-third of a mile northeastward of the latter buoy.

10 **South Spit** extends one-third of a mile northward from Johnson Point, at which distance there is a depth of 12 feet (3^m7), and a dry rock lies 350 yards (320^m0) northeastward from the same point. Between South Spit and Middle Bank is the channel, over a quarter of a mile wide and 5 fathoms (9^m1) deep, and to lead between these two shoals and north of Little Island Bank, keep South Point of Clapperton Island in line with the north fall of Manitoulin Island, bearing 098°.

- 15 **Buoy.**—The north end of South Spit is marked by a black spar buoy.
 [For Clapperton Island and Channel *see* pages 298 and 299.]

Chart 2286.

20 **West and north coast of Great Cloche Island.**—From Flat Island (*see* page 288), the coast of Great Cloche Island turns abruptly northward, forming the east side of Wabuna Channel the whole low limestone shore which may be approached to 100 yards (91^m4).

Northwest Point, 2 $\frac{3}{4}$ miles northward from Flat Island, has an open cove on its southeast, and an excellent boat harbour known as **Boat Cove** on its northeast side.

- 25 **Halfway Islands**, two in number, and 15 feet (4^m6) high, lie a quarter of a mile westward of Northwest Point, and the channel between them and the latter is deep.

30 From Northwest Point, the coast of Great Cloche Island alters its direction and character now running nearly east and being more indented. **Neptune Island** is situated 1 $\frac{1}{2}$ miles from Halfway Islands, being separated from the main island by a boat channel. The islet situated midway between Boat Cove and Neptune Island should receive a berth of 150 yards (137^m2).

Bell Cove is a wide indentation immediately eastward of Neptune Island, and contains anchorage in 7 and 8 fathoms (12^m8 and 14^m6) over mud.

- 35 **Sturgeon Cove** is a well sheltered bay situated eastward of Bell Cove and divided therefrom by a narrow peninsula, the northern extremity of which should not be approached nearer than 200 yards (182^m9). This cove has excellent shelter in 2 to 3 fathoms (3^m7 to 5^m5), mud, but its narrow entrance is so obstructed by a rock, with 7 feet (2^m1) of water on it, as to render it unsafe
 40 without buoys, for the entry of any but very small craft.

45 **Alert Point** forms the east entrance point of Sturgeon Cove, the dry rock off the point being 3 feet (0^m9) high; shoal water extends from this dry rock 150 yards (137^m2). Two open coves lie, respectively, one-half and three-quarters of a mile eastward of Alert Point, and from these coves the shore runs in an easterly direction in three slight curves to Hunt Point.

Chart 2286.

The survey was not taken eastward of a line joining Hunt Point of Great Cloche Island and Eastern Island on the north shore, the northeast extreme of which is situated a little over 4 miles northwestward from **Hunt Point**, as navigation without local knowledge is here at an end on account of the many 5
sunken rocks to be met with eastward of this line. A vessel bound to Whitefish River, should not proceed without a pilot any further east than the point a quarter of a mile west of Hunt Point, as between these two, shoal water extends from the shore 200 yards (182^m9). An islet lies 300 yards (274^m3) northward of Hunt Point, and a rock, with 12 feet (3^m7) of water on it, lies 100 yards 10
(91^m4) southwest from the islet.

Bay of Islands is the area north of Great Cloche Island stretching eastward between the latter and the north shore. The upper end or easterly section of these waters is known locally as **Whitefish Bay**. The latter is uncharted.

Sturgeon Bay (*Lat. 46° 03' N., Long. 81° 52' W.*), is a narrow indentation in 15
the north shore of Great Cloche Island immediately east of Hunt Point, and the nearest of the larger islands lying about one mile northeastward from Hunt Point is called **Wells Island**.

From Sturgeon Bay, the north shore of Great Cloche Island trends eastward about 2 miles to the northern entrance of Cloche Channel leading to McGregor 20
Bay (*see page 262*).

On one of the southerly islands of Whitefish Bay is located **Moredolphton Camp**, a tourist resort, about half a mile distant from the northwest shore of the Cloche Peninsula.

Freud Bay is a small indentation on the north shore of Whitefish Bay near 25
its head and close by the **Whitefish River** enters the bay. A short distance up the river is **Whitefish Falls**, a post office on the highway, and station on the Algoma Eastern Railway; **Willisville** is inland a few miles, where there is a station and a number of tourist camps in the vicinity.

Flat Point, on the north shore of Bay of Islands is situated about 6 miles 30
west of the mouth of Whitefish River, and nearly opposite to Hunt Point of the south shore.

Helen Lake is a large lake on Great Cloche Island north of the railway, its eastern end being not far from the waters of Cloche Channel.

East Rous Island is the next large island west of Great Cloche Island, 35
from which it is separated by Wabuno Channel, a little over a mile wide. It is a little more than 2 miles long and has a maximum width of over one mile, being separated from West Rous Islands by a boat passage, known as **Rush Channel**.

Schreiber Island, 54 feet (16^m5) high, lies a quarter of a mile northward of 40
East Rous Island, and its northwest and northeast sides are steep-to. A rock, with 3 fathoms (5^m5) on it, lies 250 yards (228^m5) westward of Schreiber Island; and less than 100 yards (91^m4) from its southeast point is an islet, 6 feet (1^m8) high, from which shoal water extends southward and eastward 100 yards (91^m4).

A reef, with 4 feet (1^m2) on its north extremity, stretches 250 yards (228^m5) 45
from the north point of East Rous Island in the direction of the west side of Schreiber Island, narrowing the channel with a depth of 3 fathoms (5^m5) to less than 100 yards (91^m4). With the assistance of temporary buoys this passage

Chart 2286.

was used a great deal by the *Bayfield* in the course of the survey in 1885, as a short route to the excellent anchorage under Bedford Island, a description of which will be found on page 296, but without such aid the channel should not
 5 be attempted. The whole east side of East Rous Island as far as **Palliser Point** is bold and may be approached to 100 yards (91^m4).

Mink Island is the name of the largest and easternmost of a group of islands situated south of East Rous Island, and between it and Palliser Point a vessel will find good anchorage in 5 to 6 fathoms (9^m1 to 11^m0) over mud. A small
 10 islet, 2 feet (0^m3) high, lies 300 yards (274^m3) southeastward from Mink Island, and may be approached to 200 yards (182^m9).

Blake Island, 10 feet (3^m0) high, is the southernmost of this group, but the timber with which it was covered in 1885 gave it, as well as many more of the islands—which otherwise would have been scarcely discernible at night—a much
 15 greater apparent height. The south side of Blake Island may be approached to 200 yards (182^m9). Some small islets lie 300 yards (274^m3) northward of Blake Island, and between these and Mink Island, a depth of 3½ fathoms (6^m4) may be carried in an emergency, by keeping midway between them.

West Rous Island, 1½ miles long north and south and about three-quarters
 20 of a mile wide, is fairly steep-to on its northern side, but on all others has shoal water.

Fish Creek Point is the name given to the southwest extremity of the island and contains on its north side a snug little boat cove. Half a mile southeastward of Fish Creek Point are two small islands, with a bank extending from them
 25 200 yards (182^m9) southward. A very shallow rocky spit makes out westward from Fish Creek Point, and a bank, with 9 to 13 feet (2^m7 to 4^m0) on it, extends southward from it one-third of a mile. A vessel standing northward toward this group should not lose sight of Elm Island, which in line with Straubenzee Point of Bedford Island, bears 282°. The passage between West Rous and Bed-
 30 ford Islands is fit only for small boats, there not being more than 6 feet (1^m8) in it.

Bedford Island is the next large island westward of the Rous Islands, its greatest length being 3¼ miles and greatest width, 1¾ miles.

Straubenzee Point is the name given to its southwest extremity, and from
 35 it a dangerous reef extends nearly three-quarters of a mile in a southwesterly direction, with as little as 3 feet (0^m9) of water on it.

Foster Bank, with 6 feet (1^m8) least water on it, lies with its eastern and shoaler end distant one mile, in a southerly direction from Straubenzee Point. From this position, the bank runs westward half a mile. A vessel may stand
 40 toward Foster Bank from the east until the northeast extreme of Bourinot Island is touching Straubenzee Point (the southwest extremity of Bedford Island), bearing 329°.

Eleven-foot Rock, with that depth of water on it, is situated three-quarters of a mile westward of the 6-foot (1^m8) spot on Foster Bank.

James Foote Patch, with 3¾ fathoms (6^m8) on it, lies three-quarters of a mile southwestward of the last-mentioned shallow spot.

Light-buoy.—A red light-buoy is moored, in 27 feet (8^m2) of water, on the southern edge of this last patch, and shows a *flashing red* light.

Chart 2286.

A channel nearly two-thirds of a mile wide, having from 4 to 8 fathoms (7^m3 to 14^m6) of water in it, exists between these shoals and Bedford Island. Vessels should, however, pass south of these shoal banks, by keeping the north end of Picnic Island in line with, or south of the south side of Narrow Island, bearing 085°. The south fall of Fraser Bay will also be seen on this range. 5

The northeast side of Elm Island touching the southwest side of Amedroz Island, bearing 314°, leads southwest of Eleven-Foot Rock.

The *red sector* from Narrow Island light covers these three shoals, the northern limit passing only 150 yards (137^m2) northward of Foster Bank; and the southern edge of the *red sector* leading three-quarters of a mile southward from James Foote Patch. 10

Strange Bay is a shallow open indentation half a mile in diameter immediately northward of Straubenzee Point, shallow water extending 1¼ miles westward from the head of the bay. 15

Strange Point (*Lat.* 46° 01' N., *Long.* 82° 04' W.) lies nearly a mile northward of Straubenzee Point, and, from the southern part of it, shoal water extends two-thirds of a mile. At the northern part of Strange Point, the deep water comes close to shore, and continues along the whole of the northwest and north coasts of Bedford Island. At 1¼ miles in this direction from Strange Point will be found a snug little cove called **Landing Beach**, where a boat can land in heavy southwesterly weather. 20

Bedford Island Reef is a dangerous piece of rocky ground, extending over two-thirds of a mile from the northwest side of Bedford Island. There are four separate spots, the shoalest being nearly level with the surface. The western and outer rock, with 3 feet (0^m9) of water on it, bears 016°, distant 1½ miles from Strange Point. 25

Clearing marks.—No vessel should attempt to pass inside this extensive reef, but if from the southwest, a vessel will pass a little more than one-third of a mile northwestward of all these patches, by keeping the north point of Elm Island touching South Point of Clapperton Island, bearing 235°. 30

The west end of Wabos Island just open of the west side of Bedford Island, bearing 186°, is also a safe mark for clearing the west side of this shoal. The south side of Five Islands in line with Macpherson Ledge, bearing 103°, leads a quarter of a mile northward of the whole of these patches. 35

Macpherson Ledge consists of two rocks, 200 yards (182^m9) apart, the eastern, and higher of which is 4 feet (1^m2) high and a rock, with 3 feet (0^m9) of water over it, lying the same distance further west. The ledge lies 300 yards (274^m3) from the northeast point of Bedford Island, and two-thirds of a mile westward of Five Islands, and has good water all round it. 40

Five Islands are composed of that number of islands, large and small, and are situated midway between the north points of East Rous and Bedford Islands. They cover a distance of over three-quarters of a mile in a nearly east and west direction, leaving a good passage between them and Macpherson Ledge into Bedford Harbour. 45

Ten-foot Rock, with that depth of water over it, lies a quarter of a mile northward from the eastern of the Five Islands Group, the south sides of which should receive a berth of 300 yards (274^m3).

Chart 2286.

Bedford Harbour is contained between Five Islands on the north, Rous Island on the southeast, and Bedford Island on the west, and contains excellent anchorage in any depth under 9 fathoms (16^m5). The best berth is under 5 **Wise Point** of Bedford Island, and a quarter of a mile offshore in 3 to 4 fathoms (5^m5 to 7^m3). The harbour is entered between Macpherson Ledge and Five Islands, taking care to pass 300 yards (274^m3) eastward of Wise Point off which a bank extends in a northeasterly direction nearly that distance.

10 **Bears Back Island** lies midway between the southern portions of Bedford and Amedroz Islands. It is two-thirds of a mile long southwest and northeast and broken up by several indentations, particularly on the south side where there is an excellent little harbour for boats drawing less than 7 feet (2^m1); its east and southeast sides are steep-to.

15 **Bears Back Shoal** makes out one-third of a mile from the western low side of the above island to the depth of 3 fathoms (5^m5), but at half this distance there is a spot, with only 3 feet (0^m9) of water on it.

Lansdowne and Lorne Rocks, with 17 feet (5^m2) of water on them, lie, respectively, southeastward two-thirds of a mile, and eastward three-quarters of a mile from Elm Island.

20 **Elm Island** is a narrow bank of stones, 7 feet (2^m1) high, and 200 yards (182^m9) long, distant nearly 1 $\frac{1}{4}$ miles southwesterly from Bears Back Island.

Elm Island Bank, with 6 to 12 feet (1^m8 to 3^m7) of water over it, extends a quarter of a mile northward and northward from Elm Island; its other sides may be approached to 200 yards (182^m9).

25 **Clearing marks.**—A vessel may carry 5 fathoms (9^m1) between Bears Back and Elm Islands, by keeping the northeast side of Clapperton Island touching the south point of Amedroz Island, bearing 296°. The bare rocky summit of Wilson Point (Croker Island) open southwest of Amedroz Island, bearing 320°, leads southwestward of Elm Island Bank.

30 **Tilley Rock**, with 8 feet (2^m4) of water on it, lies a quarter of a mile northwest from the north extremity of Bears Back Island, and a rock, with 3 feet (0^m9) on it, lies 150 yards (137^m2) from the same north point.

Mowat Point of Clapperton Island in line with the north extremity of Elm Island, bearing 235°, leads northwestward of Tilley Rock and Bears Back Shoal.

35 **Sullivan Patch**, with least water of 3 $\frac{1}{2}$ fathoms (6^m4), is situated two-thirds of a mile northward from the north point of Bears Back Island. Mowat Point of Clapperton Island in line with the north extremity of Elm Island, bearing 235°, leads between Tilley Rock and Sullivan Patch.

40 **Amedroz Island** lies nearly 1 $\frac{1}{4}$ miles northeastward of Clapperton Island, its greatest diameter being 2 $\frac{3}{4}$ miles. The eastern side of the island is distant 3 $\frac{1}{4}$ miles northwestward from Straubenzee Point (Bedford Island).

45 **Todd Shoal** extends from **Todd Point** (the eastern extremity of Amedroz Island), a third of a mile northward where there is a depth of 13 feet (4^m0). The same depth will be found 300 yards (274^m3) eastward of Todd Point, while from the southeast sharp extremity of the peninsula, a reef makes out in a southeasterly direction 200 yards (182^m9).

Chart 2286.

Shoal.—A rock, with $6\frac{1}{2}$ feet (1^m9) of water over it, lies 1,000 feet (304^m8) northwestward of the north end of Todd Shoal, on a boulder patch.

From the last mentioned locality, the coast of Amedroz Island trends southwest one mile forming a bight with good water in it, to **Middleton Islands**, two in number, the western one being the larger. A rock, with 13 feet (4^m0) of water on it, lies 200 yards (182^m9) eastward of these islands, and a passage 200 yards (182^m9) wide, with depth of 11 feet (3^m4), separates these islands from the main island. From Middleton Island, the coast continues in the same direction one mile to Carleton Point.

Carleton Point, the low south extremity of Amedroz Island, and the shore eastward of it for two-thirds of a mile, are fringed with shoal water for a distance of 300 yards (274^m3).

Magee Point is situated over three-quarters of a mile northwestward from the last mentioned, enclosing between them a long shallow indentation, known as **Reedy Bay**, in the mouth of which are two islets. Between them and Magee Point, a small craft may find temporary anchorage in 10 or 12 feet (3^m0 or 3^m7) of water.

Magee Bank is the name given to the rocky flat extending nearly a quarter of a mile southward from the islets above mentioned and Carleton Point. The whole of Croker Island open southwestward of Amedroz Island, bearing 334° , leads west of this bank.

Charts 2286, 2287.

The central and gravelly projection of Magee Point should receive a berth of 200 yards (182^m9). From the north part of this point, the northwest side of Amedroz Island runs northeasterly $1\frac{1}{4}$ miles to the western part of **Robinson Point**, the most northerly projection of Amedroz Island. This coast is fairly steep-to and may be safely approached to 200 yards (182^m9).

Bourinot Island (*Lat.* $46^\circ 04' N.$, *Long.* $82^\circ 08' W.$) is situated over three-quarters of a mile eastward of Robinson Point; it has an average diameter of one-third of a mile, and its coast is indented by several small coves.

Bourinot Reef, with 9 to 12 feet (2^m7 to 3^m7) of water over it, extends a third of a mile northeastward from Bourinot Island, and great care should be taken in passing this dangerous reef, as no clearing mark could be obtained to lead a reasonable distance northward of it. A bank extends the same distance south and southeast from Bourinot Island, but the east and west coasts of the island may be approached to 200 yards (182^m9).

Fleming Bank, with 9 feet (2^m7) on it, is a dangerous shoal, bearing 301° , distant $1\frac{2}{3}$ miles, from the northwest point of Bourinot Island. The bank lies northwest and southeast, and under the depth of 3 fathoms (5^m5) is over one-third of a mile in length.

Clearing marks.—The south fall of **White Mountain** in line with the west end of Hog Island, bearing 083° , leads north, and the same hill in line with the east end of that island, bearing 080° , leads south of Fleming Bank. Todd Point (Amedroz Island) touching the southwest extreme of Bourinot Island, bearing 131° , leads 150 yards (137^m2) southwest of this bank.

Buoy.—A red and black spar buoy is moored, in 18 feet (5^m5) of water, southward of the western end of Fleming Bank.

Chart 2287.

Clapperton Island.—This island is one of the largest in this part of North Channel of Lake Huron, being $5\frac{1}{4}$ miles in length from the lighthouse to Mowat Point, and $4\frac{1}{4}$ miles in greatest width. It may be said to form part of the eastern boundary of the open water of North Channel of Lake Huron. It lies opposite and north of Mudge Bay, Mowat Point being distant $2\frac{3}{4}$ miles from Francis Point, the western entrance point of West Bay.

Light.—Fog signal.—A *fixed white* light is exhibited, at an elevation of 30 feet (9^m1), from a white, square structure surmounted by a red lantern, on the north end of Clapperton Island. From the southeast, this light is not visible until bearing 259° .

A hand fog-horn answers vessels' signals.

Robertson Rock is a very dangerous obstruction lying in **Main Passage**, as the channel between Clapperton and Croker Islands is called, and is just at that distance from the former which a stranger would be apt to keep. The reef extends over a space of nearly one-third of a mile long in a northwest and southeast direction, the shoalest pinnacle, with only 8 feet (2^m4) of water on it (and in low stages there may be 6 feet (1^m8) less), being in the middle and bearing from Clapperton Island lighthouse 054° , a little over half a mile.

At the northwest extremity of the reef, there is a second lump of 12 feet (3^m7) on it, and at the opposite end a third with 13 feet (4^m0) over it. A depth of 30 fathoms (54^m9) will be found on the north side of Robertson Rock, 20 fathoms (36^m6) between the reef and Clapperton Island, and 10 fathoms (18^m3), 50 yards (45^m7) distant from the shores of the latter.

Light-buoy.—Robertson Rock is marked by a red light-buoy, showing a *flashing red* light, moored close to its southeast extremity.

Cartwright Point is situated nearly $1\frac{1}{2}$ miles eastward of the lighthouse and this portion of the island coast has very deep water close to it, there being 20 fathoms (36^m6), 50 yards (45^m7) distant. A little over half a mile eastward from the lighthouse is a small wharf at which supplies for the former are landed.

Light.—From a mast, with white square daymark on the northwest extremity of Cartwright Point, a *fixed white* light is shown, at a height of 35 feet (10^m7).

Logan Island lies one mile southeastward from Cartwright Point, being separated from the main island by a barrier of sunken rocks. The north side of Logan Island is shoal for 300 yards (274^m3) and its eastern side for 150 yards (137^m2), while one-third of a mile in the latter direction is a spot, with a depth of $3\frac{1}{4}$ fathoms (5^m9), falling down suddenly to 20 fathoms (36^m6).

Light-buoy.—A black light-buoy, showing a *flashing white* light, is moored in $8\frac{1}{2}$ fathoms (15^m5) of water on the eastern side of the above spot.

Logan Bay is a double indentation westward of the island of that name and although the water is shallow, the sandy bottom is fairly level, and temporary anchorage may be had, in 15 to 18 feet (4^m6 to 5^m5), between the southeastern part of Logan Island and the south entrance point of the bay known as Carling Point.

Carling Point is situated a third of a mile southwestward of the islet on the south side of Logan Island and may be approached from the east to 250 yards (228^m5).

Chart 2287.

Carling Bay is contained between Carling and Baker Points, and should not be entered farther west than the line of these points.

Baker Point is situated nearly 2 miles northward from Mowat Point of Clapperton Island, and to within half a mile of Mowat Point the coast may be approached to 300 yards (274^m3). 5

Mowat Point bears 267°, distant 11 (9½ nautical) miles, from Narrow Island lighthouse. It is low and narrow.

A very shoal rocky spit, with less than 6 feet (1^m8) of water over it, makes off from the end of this point in a southerly direction a quarter of a mile and a bank terminating in a rock, with 9 feet (2^m7) on it, extends a quarter of a mile east from this point. 10

Buoy.—A red spar buoy is moored in 24 feet (7^m3) of water to mark the extremity of the spit extending southward from Mowat Point.

Clapperton Channel separates Manitoulin and Clapperton Islands. It is contained between Mowat Point of Clapperton Island and Francis Point on the east, and Courtney Island and the western part of Maple Point on the west; and may be navigated in daylight and clear weather by vessels drawing 12 feet (3^m7) of water (in low stages there may be 6 feet (1^m8) less). 15

Mowat Island (Lat. 45° 59' N., Long. 82° 13' W.) lies three-quarters of a mile westward from Mowat Point. From its southwest extremity, shoal water extends in that direction 200 yards (182^m9) to a depth of 15 feet (4^m9). The passage between Mowat and the main island is fit only for boats. 20

Meredith Island is the next island nearly half a mile northwestward of Mowat Island. It is the largest of the five islands in this locality, being separated from Clapperton Island by a shallow boat channel full of rushes. From the western point of this island a rocky spit extends in a southwesterly direction, a little over three-quarters of a mile called **The Ridge** and terminating in a bank of boulders, with only one foot (0^m3) of water on it, called Meredith Rock. 25

Meredith Rock has deep water close to its southwest and eastern sides. The southwest point of Courtney Island touching the northern Spilsbury Island, bearing 313°, leads 250 yards (228^m5) southwest of Meredith Rock. The east side of Harbour Island touching the west side of Burbidge Island, bearing 028°, clears the west side of the whole of The Ridge by 250 yards (228^m5). 30

Sailing vessels may stand toward Meredith Rock and The Ridge from the east until the west side of Meredith Island touches the east side of Harbour Island, bearing 004°. 35

Beacon.—Upon Meredith Rock is erected a beacon, painted white, and fitted with a reflector band.

Burbidge Island lies nearly 400 yards (365^m8) westward from Meredith Island, the passage between them containing a depth of 9 feet (2^m7). A bank extends westward from Burbidge Island a distance of 350 yards (320^m0) with as little as one foot (0^m3) of water in one place. 40

Buoy.—A red spar buoy is moored, in 18 feet (5^m5) of water, on the western edge of the bank extending westward from Burbidge Island. 45

Chart 2287.

Clapperton Harbour.—The coast of Clapperton Island at **Panet Point** ($1\frac{1}{2}$ miles northwestward from Mowat Point) trends abruptly northward and by recurving westward and southward forms a semicircular bay in which is
5 excellent anchorage and shelter from the heaviest gales.

Sandfield Point forms the western point of this bay, distant nearly $1\frac{1}{2}$ miles westward from Panet Point.

Beverly Island.—This low, round, small island, lies 350 yards (320^m0) southward from Sandfield Point and is separated from it by a boat channel.
10 The eastern side is fairly steep-to, there being a depth of 21 feet (6^m4) at 150 yards (137^m2). A patch, with 2 feet (0^m6) of water on it, lies a third of a mile west from Beverly Island.

Light.—A *flashing white* light is exhibited, at an elevation of 27 feet (8^m2), from a steel tower with white daymark, on Beverly Island.

15 **Buoy.**—A black spar buoy marks the southeast edge of the shoal off Beverly Island.

Harbour Island, 24 feet (7^m3) high, a little over a quarter of a mile in average diameter is the northernmost of the group. Its north and west sides are bold, but from its southeast extremity a bar extends across to Panet Point,
20 with depths on it varying from 4 to 10 feet (1^m2 to 3^m0). The best anchorage in Clapperton Harbour is under the northeast point of this island distant therefrom 200 to 300 yards (182^m9 to 274^m3) in 5 fathoms (9^m1) over clay.

Vankoughnet Island is the larger of the two islands situated at the southwest extremity of Clapperton Island. Its length east and west is one mile and
25 greatest breadth three-quarters of a mile. Between it and Clapperton Island there is a passage known as Indian Channel, through which 6 feet (1^m8) may be carried.

Spilsbury Islands, two in number and small, lie a quarter of a mile from the southwest coast of Vankoughnet Island and are joined together by boulders.
30 A narrow and crooked channel, with a depth of 12 feet (3^m7) of water, exists between these small islands and Vankoughnet Island. The water is fairly good on the west side of Spilsbury Islands, 12 feet (3^m7) being found at 200 yards (182^m9) but in a southeasterly direction extends a dangerous rocky bank, known as Boulder Bank.

35 **Boulder Bank** extends in a southeasterly direction for over one mile, with depths ranging from one to 7 feet (0^m3 to 2^m1).

Buoys.—Three red spar buoys mark the northern side of Clapperton Channel in the vicinity of Boulder Bank.

40 **Courtney Island** forms the north entrance point to Clapperton Channel from the west, and with exception of the northeast side is surrounded with shoal water and joined to Vankoughnet Island by a bank of dry stones.

45 **Courtney Bank.**—The outer side of this dangerous and extensive bank of boulders is situated over half a mile westward of Courtney Island. It is half a mile long northeast and southwest by a little over a quarter of a mile broad, with depths varying from a few inches to 6 feet (1^m8).

Chart 2287.

Griffin Bank, the depth on which is 8 feet (2^m4), lies north of the latter and two-thirds of a mile northwestward from the northwest extreme of Courtney Island.

Miall Patch, with depth of 12 feet (3^m7), is situated southwestward distant 5 over three-quarters of a mile from the southwest point of Courtney Island, being separated from Courtney Bank by slightly deeper water.

Western Reef, the westernmost of all the patches lying near the west entrance to Clapperton Channel, bears 270° , distant $1\frac{1}{2}$ miles from the southwest point of Courtney Island. It is about 100 yards (91^m4) in diameter and has 11 10 feet (3^m4) of water over it. It is of more than local importance, because it lies in the track from Clapperton Island lighthouse to Gore Bay. A good channel, 8 to 9 fathoms (14^m6 to 16^m5) in depth and three-quarters of a mile broad, separates it from the nearest of the shoals previously described.

Clearing marks.—Clapperton Island lighthouse in the hollow of the hills 15 at Fort la Cloche, bearing 060° , leads 400 yards (365^m8) northwest of this reef. The southwest point of Innes Island touching the northeast point of Darch Island, bearing 335° , leads two-thirds of a mile southwestward of Western Reef.

North Shoal, the northernmost of the three banks which immediately front the west entrance to Clapperton Channel, is a rocky bank, half a mile 20 long in an easterly and westerly direction, and 200 yards (182^m9) broad, with least depth 4 feet (1^m2); its southwestern extremity being situated $1\frac{1}{3}$ miles, 227° , from the southwest extreme of Courtney Island.

Middle Bank, with 4 feet (1^m2) on it, and perhaps the most dangerous obstruction in the west entrance of Clapperton Channel, is 300 yards (274^m3) 25 long east and west, by 200 yards (182^m9) in width, and composed of boulders. Its shoalest part bears 293° from the north extremity of Maple Point. It is separated from North Shoal by a 5-fathom (5^m5) channel a quarter of a mile broad, but in its present unbuoyed state should not be used.

Buoy.—Middle Bank is marked by a red spar buoy. 30

Clearing mark.—To pass westward of Griffin Bank, Courtney Bank, Miall Patch, North Shoal and Middle Bank, keep the northwest end of Mt. McBean over the northwest extremity of Benjamin Island, bearing 026° .

Second Point is the most western point of Clapperton Island, being situated northwestward nearly $1\frac{3}{4}$ miles from Sandfield Point. Half a mile southeast- 35 ward from Second Point is a good harbour known as **Snug Cove**.

Second Bank is a shallow, rocky bank stretching southward from Second Point to within 150 yards (137^m2) of Vankoughnet Island, leaving a passage of 12 feet (3^m7) (in low stages there may be 6 feet (1^m8) less) close to the latter.

Lewin Island, 5 feet (1^m5) high and small, is separated from Second Point 40 by a boat passage 300 yards (274^m3) wide and lies in a northwesterly direction from the point. A bank extends westward from this island a quarter of a mile, where there is a depth of 13 feet (4^m0). The north edge of this bank extends eastward a third of a mile to a small wooded islet called **Power Island**.

Beattie Bay is the name given to the shallow bight between Second and 45 Senecal Points.

Chart 2287.

Senecal Point (*Lat. 46° 02' N., Long. 82° 16' W.*) is situated three-quarters of a mile northeastward from Secord Point and forms the northern entrance point of Beattie Bay.

- 5 **Blackstone Point**, lying one mile northeastward of Senecal Point, is steep-to but off the bight formed between these two points, shoal water extends a third of a mile, the edge of the bank being very abrupt.

From Blackstone Point, the coast of Clapperton Island trends nearly a mile northeastward to the lighthouse and is steep-to.

- 10 **Directions for Clapperton Channel.**—From the west, before the west end of Mt. McBean comes over the western extremity of Benjamin Island, bearing 026°, bring Mowat Point of Clapperton Island under the north fall of Manitoulin Island, bearing 098°, which range will be open a little of Maple Point. This mark kept on will lead between the buoys marking South Spit and Middle
15 Bank in not less than 4 fathoms (7^m3) of water.

- As Maple Point is approached, bring the north fall of Manitoulin Island sufficiently northward of Mowat Point of Clapperton Island to clear the flat, marked by a buoy, extending 100 yards (91^m4) from Maple Point. After the
20 northern part of this point is passed, the leading mark should again be brought exactly on, and kept so, until nearly abreast of the eastern extreme of Little Island Bank, which position will be indicated by the northern Spilsbury Island touching the southwest point of Courtney Island, bearing 313°.

- The latter mark should now be kept on astern, until Meredith Rock is passed, of which a vessel will be sure when Meredith Island touches Harbour
25 Island bearing 004°. From the intersection of these ranges, a course of 089° for 7³/₄ (6³/₄ nautical) miles will take a vessel, bound to Little Current, to a position, bearing 150°, distant three-quarters of a mile from James Foote Patch (*see* page 294), or, if proceeding to West Bay she may continue with the Spilsbury Island mark astern, which will also clear the shoals off Francis Point.

- 30 If proceeding to Mudge Bay, a vessel may turn southward from the last mentioned leading mark, when Burbidge Island appears its own breadth east of Harbour Island, the latter bearing 032°.

Approaching, and passing through Clapperton Channel from the east, a vessel has little more to do than to reverse the courses given above.

- 35 **Entering Clapperton Harbour.**—To enter the harbour from the east, keep on the Spilsbury Island range, until the east side of Harbour Island touches the west side of Burbidge Island, bearing 027°. From this position, a course of 004° will lead west of Burbidge Island Shoal, after passing which, the course may be altered more eastward, rounding Harbour Island at a distance of 200 yards
40 (182^m9), and anchoring under its northeast point as directed on page 300.

From the west, when upon the leading mark, as soon as Spilsbury Island range comes on, steer 041° for the northwest point of Harbour Island, give it a berth of 200 yards (182^m9), and anchor as before directed.

- A vessel may cross The Ridge, with 13 feet (4^m0) of water (at low stages
45 there may be 6 feet (1^m8) less), by keeping the north fall of Manitoulin its own apparent height north of Mowat Point of Clapperton Island.

Description of the features of the mainland coast from north of Great Cloche Island to Fox Island or the eastern entrance to McBean Channel will now be given.

Chart 2286.

Carpmael Island, 17 feet (5^m2) high, lies nearly $1\frac{2}{3}$ miles, 296° , from Hunt Point. Two dry rocks lie close west of it, the south side of which as well as the island may be approached to 100 yards (91^m4).

Gordon Rock, a group of stones, 5 feet (1^m5) high, lies over one-third of a mile westward from Carpmael Island, and the passage between is shallow. 5

Luard Rock, with 12 feet (3^m7) of water on it, lies northeastward $1\frac{3}{4}$ miles from the northern Halfway Island of Wabuno Channel (*see* page 292).

Buoy.—A black spar buoy marks the southern side of Luard Rock.

Moberly Rock, with 9 feet (2^m7) of water over it, is situated 2 miles westward from Carpmael Island. 10

Oliver Rock, with 15 feet (4^m6) of water on it, lies the same direction $1\frac{1}{3}$ miles from the same.

Eastern Island derives its name from being the most easterly island of the group extending eastward from the Indian village of Sagomuk (*see* page 305). The eastern extremity of this island lies $2\frac{1}{4}$ miles, 018° , from Halfway Islands. 15

High Island, so called from its high wooded summit elevated 186 feet (56^m7), is situated 200 yards (182^m9) westward of Eastern Island. A bare rock, 10 feet (3^m0) high, lies about 50 yards (45^m7) south of its west extremity, and is steep-to. The remainder of the south coast of both these islands may be approached to 150 yards (137^m2). 20

Perley Island, one third of a mile long and 200 yards (182^m9) in breadth, is the next island westward of High Island, being separated therefrom by a channel a quarter of a mile broad, in the southern part of which there is a depth of 6 to 9 fathoms (11^m0 to 16^m5). A rock, with 6 feet (1^m8) on it, lies 150 yards (137^m2) northwestward from the west extremity of Perley Island, but its south shore is steep-to. 25

Kirkpatrick Island is the name given to the larger and westernmost of the two small islands west of Perley Island, and which are almost connected by dry stones. The southeast coast of Kirkpatrick Island, as well as the south coast of the little island eastward of it, may be approached to 150 yards (137^m2). 30

Louisa Island has a maximum length of half a mile; it is situated nearly that distance westward of Kirkpatrick Island, and both may be recognized by the two small dry rocks lying southward of the passage between these islands, the eastern rock being 6 feet (1^m8) and the other 3 feet (0^m9) high, known as **Louisa Rocks**. 35

Louisa Rocks connected to Kirkpatrick Island by a bank, and 150 yards (137^m2) southwestward of it is a rock, with 13 feet (4^m0) on it. The water is shoal between the western one and the southeast point of Louisa Island, but with these exceptions the water is good between them. 40

Buoy.—A red spar buoy marks the end of the shoal area southwest of Louisa Rocks.

Chart 2286.

Tupper and Galt Islands lie next westward of Louisa Island. The former and southern island has a rock, which just shows above the water, lying 200 yards (182^m9) southeast of it.

- 5 **Barren Island**, the western one of the above sub-group, is situated over one mile southeastward from the east end of Hog Island.

Channel Island, about 30 feet (9^m1) high, and the easternmost of the group lying off the site of the old Hudson's Bay Company post, **Fort la Cloche** derives its name from the fact of its being the little island that vessels passed
10 close northward of, when approaching the then existing company's wharf on Hog Island from the eastward.

- Channel Island is separated from Barren Island eastward of it by a passage nearly a mile broad, and, on the line joining Channel Island to the south point of Barren Island, from 12 to 15 fathoms (21^m9 to 27^m4) will be found right across.
15 Vessels should not proceed farther north than this line, as a reef with as little as one foot (0^m3) of water on it (in low stages it will be dry) lies half a mile eastward from the east end of Channel Island; another sunken rock, with less than 6 feet (1^m8) of water on it, lies eastward, a quarter of a mile from the same.

- Nisbet Rock**, 3 feet (0^m9) high, lies 350 yards (320^m0) northeast from the
20 east end of Channel Island, and between them, rather nearer the island, is the channel.

- Hog Island** (*Lat. 46° 05' N., Long. 82° 04' W.*) lies immediately westward of Channel Island and is two-thirds of a mile long with an average breadth of 150 yards (137^m2). Small boats could proceed to the mouth of the stream, which
25 flows past the site of the former post, anchoring in the shallow but well sheltered bay into which this stream empties. There is good water all along the north side of Hog Island and between it and McRae Island, distant from the middle of its north side, 300 yards (274^m3).

- Jenkins Rock**, 2 feet (0^m6) high, lies 200 yards (182^m9) northeastward
30 of the west end of Hog Island.

Round Island, 150 yards (137^m2) in diameter, lies 300 yards (274^m3) northwestward of Hog Island, and although 12 feet (3^m7) was carried between them by keeping nearer the former, the extensive Hog Island Bank southwestward nullifies the use of this passage.

- 35 **Lampey Rock**, 7 feet (2^m1) high, lies 150 yards (137^m2) northward, and **Mann Rock**, 3 feet (0^m9) high, 200 yards (182^m9) northward of Round Island.

- A small islet, 4 feet (1^m2) high, is situated 200 yards (182^m9) westward from the middle of Round Island, and between them there is a depth from 3 to 4
40 fathoms (5^m5 to 7^m3), but by reason of the shoal bank above alluded to, this passage serves little purpose.

Chatwin Rock, round, smooth and 7 feet (2^m1) high, is 200 yards (182^m9) westward of the small islet last mentioned, the two being joined by sunken rocks.

- 45 A rock, with only one foot (0^m3) of water on it (in low stages it will be dry), lies nearly 200 yards (182^m9) northwest from Chatwin Rock, and between them is the channel, in which a vessel can find 18 feet (5^m5) of water, passing about 100 yards (91^m4) from Chatwin Rock.

Chart 2286.

Matheson Island is situated nearly a mile northwesterly from Hog Island, its southeast point being marked by a dry stone, and a sunken rock 50 yards (45^m7) southeast of the same.

Hog Island Bank takes its name from the island, off the southwest extremity of which, it extends nearly three-quarters of a mile in a southwesterly direction; and westward quite three-quarters of a mile. Near its most southern extremity is **Belcher Rock**, with only 4 feet (1^m2) of water on it, distant half a mile southwest from the west point of Hog Island. 5

Buoy.—A red spar buoy is moored 150 feet (45^m7) south of Belcher Rock. 10

Pacific Rock, with 5 feet (1^m5) of water over it, and situated near the western extremity of this bank, lies a little over a third of a mile southward from Chatwin Rock.

To pass southward of the whole of this bank, keep the entrance to McBean Channel open southward of Solomon Point, bearing 292°. 15

Hewett Shoal, with 18 feet (5^m5) of water, lies 210°, 1.1 miles from the southeast end of Hog Island.

Buoy.—A red and black spar buoy marks Hewett Shoal.

McTavish Island may be recognized as being the most outstanding island in this neighbourhood; it is half a mile in length, and its south and east sides are steep-to. Its southeast point is situated 1 $\frac{3}{4}$ miles southeasterly from Solomon Point, and 1 $\frac{1}{2}$ miles westward from Chatwin Rock. There is a passage for boats between this island and the chain of islands a quarter of a mile north of it. 20

Buoy.—A red spar buoy marks an uncharted shoal off the southwest end of McTavish Island. 25

Solomon Point is the southwest point of the peninsula on which the Indian village of Sagomuk is situated; a sandbank extends 200 yards (182^m9) from Solomon Point and the same distance from the western extremity of McTavish Island, and a vessel should not stand into the bight northward of a line joining these two positions. 30

Sagomuk, the Indian village situated on Solomon Point, is 3 $\frac{1}{2}$ miles westward of the site of the old Hudson's Bay Company post, Fort la Cloche. A small vessel, of 6 feet (1^m8) draught, can find anchorage near the village in 9 to 12 feet (2^m7 to 3^m7) of water over a sandy bottom.

Stewart Island is small and wooded, having a dry reef 50 yards (45^m7) west of it, and a dry rock close to its east side. It lies one-third of a mile north-eastward of the south part of Solomon Point, and between them there is a depth of 12 to 15 feet (3^m7 to 4^m6) over sand. A bank extends 300 yards (274^m3) southward from Stewart Island. 35

Linter Island is slightly smaller than the above, and situated 300 yards (274^m3) west of it. A dry reef lies 100 yards (91^m4) northwest of the island and two other dry rocks lie between it and the shore. The deep water of the channel approaches close to the south side of Linter Island. 40

Chart 2287.

Bacon Island lies close to the shore and is situated 1.1 miles westward of Sagomuk, and is fairly steep-to. From this island, the coast trends northward a quarter of a mile, and then northwestward over two-thirds of a mile in a series of small coves, and should not be approached nearer than 250 yards (228^m5). The coast is now broken up into a number of small islands and rocks.

From Fox Island (the easternmost large island on the south side of McBean Channel), a string of dry rocks extends in a southeasterly direction 1.2 miles, terminating in **East Rock**. This rock, 6 feet (1^m8) high, with a few stunted trees on it, lies the same distance westward of Solomon Point and half a mile southwestward of Linter Island, and between them is the passage of 13 to 14 fathoms (23^m8 to 25^m6) of water, leading to McBean Channel.

A rock, awash, lies a third of a mile southward from East Rock, a dry stone 150 yards (137^m2) northward of it, and a rock, with 7 feet (2^m1) of water over it, lies 300 yards (274^m3) southeast from the same.

Beacon.—Buoy.—There is a white beacon, with black top, on East Rock. A black spar buoy is moored on the northeast corner of a shoal, with 3 feet (0^m9) over it, situated about 3½ cables southeast of this rock.

West Rock is a rock of similar character, lying a quarter of a mile south-eastward from the southeast extremity of Fox Island. Between West and East Rocks are two other dry rocks with shoal water about them. In addition to West Rock itself, which is 6 feet (1^m8) high, a rock lies 250 yards (228^m5) south-east and another 100 yards (91^m4) west of it. A rock with 6 feet (1^m8) of water on it, lies nearly half a mile southeast from West Rock.

Ritchie Rock, with 11 feet (3^m4) of water on it, is situated southward nearly two-thirds of a mile from West Rock, and northward 1¼ miles from Gisborne Point of Croker Island.

A passage, with depth of 21 feet (6^m4), exists between West Rock and Fox Island, to lead to which from the southeast bring Bald Rock open its breadth east of Fox Island, bearing 346°, and steer for it, leading east of Ritchie Rock and giving Fox Island a berth.

Croker Island is 1½ miles long north and south and is separated from Clapperton Island by a channel 1¼ miles wide called Main Passage. Its north-east point lies 1½ miles southward from the eastern extreme of Fox Island.

Wilson Point (Lat. 46° 04' N., Long. 82° 13' W.) is the southern extremity of Croker Island, being surmounted by a bare, peaked rock, 125 feet (38^m1) in height, with deep water close to it.

Gisborne Point is the eastern projection of Croker Island, and may be known by a round, bare rock, 13 feet (4^m0) high, lying about 50 yards (45^m7) from it and which is steep-to. From Gisborne Point, the coast trends northwestward three-quarters of a mile to Ritchie Point.

Nearly midway between **Ritchie Point** and the last mentioned is a group of stones, 2 feet (0^m6) high and steep-to. The water in the bight inside these stones is also fairly deep.

As the north and west coasts of Croker Island have not been surveyed no further description of the island can be given.

Secretary Island is separated from the western extremity of Croker Island by a channel 200 yards (182^m9) wide, through which there is no passage, and 10 fathoms (18^m3) will be found 100 yards (91^m4) from its south side.

Charts 2286, 2287, 2294.

Sow and Pigs is the name given to a group of bare and steep-sided rocks, the highest of which (31 feet (9^m4)), situated near the southwest end of the group and called **The Sow**, lies nearly 1¼ miles northward from Clapperton Island lighthouse. 5

Directions, Little Current to Clapperton Island lighthouse.—Give the north side of Spider Island a berth of 150 yards (137^m2), pass 50 yards (45^m7) north of Low Island; 50 yards (45^m7) northward of Picnic Island, and 200 yards (182^m9) north of Narrow Island lighthouse. Thence, steer 256°, for 1½ miles, when the north side of Picnic Island should be in line with the south side of Narrow Island, bearing 085°. 10

By day, this leading mark kept on astern, will lead a vessel a third of a mile southward of Foster Bank, but over James Foote Patch, with a depth of 18 feet (5^m5), distant nearly 5 miles from Narrow Island lighthouse. The red light-buoy marking this shoal should be left to starboard. A heavy draught vessel by day, and all vessels by night, should continue the 256° course, almost coincident with the southern limit of the *red* sector from Narrow Island light. By keeping on this dividing line of *red* and *white* light, a vessel will pass three-quarters of a mile southward of James Foote Patch. 15

When, by day, the northeast side of Elm Island is touching the southwest side of Amedroz Island, bearing 314°, a vessel may steer 308° for Cartwright Point, the northeast extreme of Clapperton Island, taking care, as Elm Island bank is approached, to see that the rocky summit of Wilson Point (Croker Island) is in sight, southwest of Amedroz Island, bearing 320°. Cartwright Point may be rounded close-to and Robertson Rock light-buoy left to starboard. 20 25

At night, a vessel should keep on the south limit of the *red* sector for 6 miles from Narrow Island lighthouse, when she should haul northward for the middle of the passage between Amedroz and Clapperton Islands, steering 316°.

When abreast of Cartwright Point, proceed as directed by day, remembering that on account of the trees, Clapperton Island light is not visible, until bearing 259°. 30

If bound to McBean Channel (*see* page 308); after passing Picnic Island, bring the north sides of it and Low Island in line astern, bearing 108°, to pass southwest of the shallow bank from Great Cloche Island (*see* page 288). When Narrow Island lighthouse bears 184°, haul northward and steer 004° through Wabuno Channel, giving East Rous Island and the islet close to the southeast side of Schreiber Island a berth. The north point of the latter may be rounded close-to, when a course 292°, for 10 (8¾ nautical) miles, will take a vessel to East Rock (Fox Island). Pass 200 yards (182^m9) northward of it, and steer for Bald Rock, distant a little over 1½ miles (*see* page 308). 35 40

CHAPTER X

McBEAN AND CLAPPERTON CHANNELS TO MISSISSAGI BAY AND MELDRUM POINT

DATUM.—See page 1.

5 *Chart 2287.*

McBean Channel is the name given to the passage leading from the eastern extremity of Fox Island to Little Detroit, Aird Island. The eastern entrance to this channel may be said to lie between Fox Island on the south, and a bare rock on the north, called Bald Rock from its appearance. The mainland shore forms the north side of this passage, which is 9 (8 nautical) miles in length, with least water 7 fathoms (12^m8).

Bald Rock a loaf-like looking rock is 15 feet (4^m6) high, and lies half a mile northward from the east end of Fox Island. White bulls-eyes with red centres are painted on this rock to mark the entrance to McBean Channel.

15 **McBean Harbour**, lying at the foot of the mountain of that name, has a depth of 15 to 28 feet (4^m6 to 8^m5), muddy bottom, and is land-locked by **Anchor** and **Lee Islands** on the west, and the mainland on the east. The entrance to the harbour is situated northward two-thirds of a mile from Bald Rock, the east entrance point being known as **Beaudry Point**; the width of the entrance
20 is 120 yards (109^m7).

Black Island, so called on account of its timber, lies nearly midway between Bald Rock and the entrance, and is left on the starboard hand in proceeding to the harbour.

25 **Irwin Island** (*Lat. 46° 07' N., Long. 82° 12' W.*) is the name given to the largest of a group, the nearest of which (a rock, 2 feet (0^m6) high) to Bald Rock lies a quarter of a mile northwest from it and is left on the port hand when approaching the harbour.

30 Another group, the largest of which is called **Helen Island**, lies midway between Irwin Island and the entrance to the harbour; a vessel also passes east of this group.

Directions.—To enter McBean Harbour, pass from 100 to 150 yards (91^m4 to 137^m2) west of Bald Rock, and steer about 016° for the entrance, passing midway between Black and Helen Islands. In the narrows at Beaudry Point, there is a depth of 6 fathoms (11^m0) and when through them a vessel may anchor
35 in 4½ fathoms (8^m2), or proceed further up, letting go in 2½ fathoms (4^m6) abreast Anchor Island. At the head of this harbour will be found an Indian trail leading across to Spanish River, passing west of **McBean Mountain**.

40 **Fox Island**, the easternmost of the islands which form the south side of McBean Channel, is from 30 to 50 feet (9^m1 to 15^m2) high and sparsely wooded, having an extreme length of 2½ miles east and west and an average breadth of two-thirds of a mile. The north shore has an irregular outline, but no decided points, excepting **Jones Point**, a third of a mile westward of Bald Rock, narrowing the channel between it and Irwin Island to 200 yards (182^m9), in which, however, there is a depth of 15 fathoms (27^m4).

Chart 2287.

Anchorage.—There is good anchorage for small craft in the small cove a quarter of a mile south of Jones Point.

Bower Rock, 4 feet (1^m2) high, lies 230 yards (210^m1) off the middle portion of Fox Island, and 1 $\frac{1}{3}$ miles westward of Bald Rock, the channel between it and Fox Island, having not less than 7 fathoms (12^m8); shoal water extends 200 yards (182^m9) westward and a third of a mile eastward of Bower Rock. 5

Beacon.—**Buoy.**—A white beacon with red top stands on this rock. A red spar buoy marks the edge of shoal water 250 feet (76^m2) west of the rock.

Hotham Island, about 50 feet (15^m2) high and 2 $\frac{3}{4}$ miles long, is situated on the north side of McBean Channel, with its southeast extremity northward a third of a mile from Bower Rock, to which it is connected by a shoal bank. The water is deep close to the island, excepting a rock, with 11 feet (3^m4) on it, lying 150 yards (137^m2) off shore and half a mile northwestward from Gillmor Point. 10 15

Pardee Islands is the name given to two islets, the southern of which, 15 feet (4^m6) high, lies 300 yards (274^m3) from Hotham Island, and a quarter of a mile northwest from Bower Rock.

Frechette Island is the next west of Fox Island, being separated therefrom by deep water three-quarters of a mile wide; the island is triangular in shape, 1 $\frac{1}{3}$ miles in length, and about 50 feet (15^m2) high, its northeast extremity being known as **Gillmor Point**. The channel here is 350 yards (320^m0) wide, with a depth of 20 fathoms (36^m6). 20

Beacon.—**Buoy.**—There is a white beacon on Gillmor Point. A black spar buoy is moored on the edge of shoal water, 200 feet (61^m0) northeast of the point. 25

Graham Point is a projection of the mainland 150 yards (137^m2) westward of Hotham Island; hence the main shore—elevated about 150 feet (45^m7) and sparsely timbered—continues in a general northwesterly direction for nearly 3 miles to **Houghton Bay**, an indentation over one-third of a mile square, with rocks at the mouth called **Houghton Rocks**, the highest of which is 6 feet (1^m8) high. 30

Shoepack Bay is a broad and deep arm, the head of which is formed by the south shore of the long and crooked peninsula, dividing the waters of McBean Channel from those near the mouth of Spanish River. In the western corner of the bay, there is a depth of 7 to 8 fathoms (12^m8 to 14^m6) over mud. 35

A small Government wharf, 100 feet (30^m5) long, with 19 feet (5^m8) of water on the east side, is located at the north end of the bay. A small freight shed stands on this wharf.

Hagarty, Hawkins, Crooks, and Boyd Islands, with the small islets and rocks between them, are situated on the south side of McBean Channel, Boyd Island being over 2 miles west of Frechette Island. The water is deep close north of this chain. 40

Hiesordt Rocks, the northwestern one, of which is 5 feet (1^m5) high, is distant over half a mile north from the abandoned lighthouse on Boyd Island. The southeastern rock, one foot (0^m3) high, lies half a mile northeastward from the same. A flat makes out 150 yards (137^m2) westward from the western Hiesordt Rock, but the water is deep between these rocks and the lighthouse. 45

Chart 2287.

South Benjamin Island, the next largest westward of Croker Island, attains an elevation of 160 feet (48^m8), being nearly divided in two by a long bay running in on the south side; the islets and dry rocks on the south side should
5 receive a berth of 300 yards. An uncharted depth of 5 feet (1^m5) is reported about 1,900 feet (591^m1) north-northwestward of The Sow.

Hook Island, half a mile in greatest diameter, of limestone formation, about 20 feet (6^m1) high and quite flat, is easily distinguishable by its contrast to the rough Laurentian formation of the islands north of it; it lies a little over
10 3 miles northwest from Clapperton Island lighthouse and one mile westward of Benjamin Islands.

From the northeast extremity of Hook Island, a shoal makes out 200 yards (182^m9) continuing to the west point of the island at a distance of 150 yards; (137^m2); the remainder of the coast of Hook Island is fairly steep-to.

Symes Rock, with 14 feet (4^m3) of water over it, is a flat reef situated a quarter of a mile southward from the south point of Hook Island, leaving a
15 depth of 5 fathoms (9^m1) between them.

Eagle Island is the largest of the group under description being nearly 2 $\frac{3}{4}$
20 miles in length, and 1 $\frac{1}{4}$ miles in greatest breadth; a large bay indents the north side, near the head of which is a dark wooded summit, 198 feet (60^m4) high, the highest part of the island. The water is deep between Eagle, Hook, and Benjamin Islands.

Gull Rock, 13 feet (4^m0) in height, and bare, lies 1 $\frac{1}{4}$ miles northwest from
25 the west extreme of Hook Island; shoal water extends from the east side 100 yards (91^m4), the other sides being steep-to. Gull Rock is separated from **Proudfoot Point** of Eagle Island by a deep channel a little more than half a mile wide.

Armour Island is a small island situated 100 yards (91^m4) off the northwest extremity of Eagle Island, the shore between it and Proudfoot Point distant one
30 mile being indented by several coves.

Mazeppa Rock, with 11 feet (3^m4) on it, lies over three-quarters of a mile northwestward from Gull Rock. Shoaler water was reported about half a mile northwest from Mazeppa Rock, but a full day's search failed to find it.

Banshee Rock, with 12 feet (3^m7) on it, lies southeasterly nearly a mile
35 from Boyd Island abandoned lighthouse; a rock, with 4 feet (1^m2) of water on it, lies southeastward nearly half a mile from the lighthouse, and 350 yards (320^m0) from Crooks Island; from the latter rock, the mill chimney is open a little southwest of the lighthouse.

Clearing marks.—To pass west of the above dangers, keep Boyd Island
40 abandoned lighthouse in line with the western Hiesordt Rock, bearing 357°. The south side of Hook Island in line with the south side of Gull Rock, bearing 121°, leads southwestward of Mazeppa Rock.

Arnold Rock (*Lat. 46° 07' N., Long. 82° 21' W.*), with 12 feet (3^m7) of water over it, lies 215°, one-third of a mile from the old lighthouse.

Hoskin Islands.—Between the old lighthouse and Aird Island is a labyrinth
45 of islands and rocks, the eastern group being known as Hoskin Islands. The eastern dry rock of the group is situated three-quarters of a mile westward from the lighthouse. The only channel to be recommended is that close west of the

Chart 2287.

old lighthouse, and, in proceeding to, or from Little Detroit by it, a vessel will pass east of the following dangers, with their positions relative to the lighthouse:—

A reef, with 15 feet (4^m6) of water over it, bearing 190°, one-third of a mile; a patch with same depth, bearing 240°, a quarter of a mile; and a rock with 6 feet (1^m8), bearing 254°, half a mile. 5

A rock, small in extent, 2 feet (0^m6) in height, steep-to on its north side but with shallow water for a distance of 350 yards (320^m0) from its southeast side, lies that distance eastward of the Hoskin Islands Group. 10

Lumsden Rock, with 7 feet (2^m1) of water on it, lies a little over a quarter of a mile northwest from the old lighthouse. A vessel will pass northeast of it by keeping the southwest side of Hook Island in line with Boyd Island old lighthouse, bearing 143°.

Buoy.—A black spar buoy marks the north edge of this rock. 15

Directions.—Proceeding from Clapperton Island lighthouse to Little Detroit; when the lighthouse bears 129°, distant half a mile, a course of 296° should be steered to pass half a mile southward of Hook Island, to avoid Symes Rock. When the west side of the latter island bears about 354°, the rock will be passed, and a vessel may haul a little northward, giving Gull Rock a berth of a quarter of a mile, passing which, keep it closed with Hook Island until the western Hiesordt Rock is in line with Boyd Island lighthouse, bearing 357°. Proceed on this leading mark passing 150 yards (137^m2) west of the lighthouse and steer for the mill or Little Detroit as necessary, taking care to keep the southwest side of Hook Island closed, or in line with the old lighthouse, bearing 143°, to pass northeastward of Lumsden Rock (*see above*). 20 25

Aird Island, 6 miles long and about one mile wide, lies east and west with its eastern extremity 1½ miles northwest of Boyd Island old lighthouse. A rock, with one foot (0^m3) of water on it, lies 370 yards (338^m3) southeastward from it, and 250 yards (228^m5) southwest of the track from the lighthouse to Little Detroit. 30

Nearly half a mile northwest of the east point of Aird Island is the village of Spanish Mills. The wharves, situated just east of the village, have depths of 10 to 16 feet (3^m0 to 4^m9). The mill has been destroyed, but the buildings of the village are still intact and a few are inhabited. 35

Arnold Point, the south entrance point of Little Detroit from the east, and 370 yards (338^m3) southeastward from Little Detroit wharf, has deep water close to it.

Little Detroit separates the eastern part of Aird Island from the narrow and crooked peninsula of the mainland forming the north and west shores of Shoepack Bay. The narrowest part of the passage is only 38 yards (25^m6) in width, with a depth of 20 feet (6^m1) (in low stages there may be 6 feet (1^m8) less). The mainland side of the passage is steep-to, but from Aird Island a rocky flat makes out from **Mary Island** and **Ethel Rock**, narrowing the passage to the breadth above mentioned. 40 45

The channel through Little Detroit has been improved, by removing the rock north of Ethel Rock and by cutting the north end off the point west of Ethel Rock, giving a clear channel 75 feet (22^m9) in width and with a least depth of 19 feet (5^m8).

The best water will be found within 40 feet (12^m2) of the point and 65 feet (19^m8) from the north end of Ethel Rock. 50

Chart 2287.

Light.—A *flashing white* light is shown at Little Detroit, at a height of 30 feet, from a steel beacon on the northeast point of Aird Island.

Directions for McBean Channel.—From Bald Rock, keep the coast of
5 Fox Island on board until a quarter of a mile west of Bower Rock, when steer for Gillmor Point. Keep mid-channel and when halfway to Little Detroit, if bound through that channel, a vessel may haul a little northward for that entrance.

Whalesback Channel is the passage north of Aird and John Islands, from
10 Little Detroit to Turnbull Island $3\frac{1}{2}$ miles southeastward of Algoma Mills (see page 325) and is so called from a rock, somewhat resembling the body of a whale, the eastern end being like the head which is the highest part and 45 feet (13^m7) high. This rock is $11\frac{1}{2}$ (10 nautical) miles from Little Detroit, and $10\frac{1}{4}$ (9 nautical) miles from Algoma Mills. The narrowest parts of the channel
15 are at Little Detroit and again at John Island, where the water is very deep (see page 320).

The **Serpent River Indian Reserve** comprises in part the north shore of Whalesback Channel.

North coast of Aird Island.—Near the east extremity of the island there
20 is a deep indention forming a double cove known as **Cameron Bight**, being separated from Little Detroit by a promontory called **King Point**, close to which the water is deep. There is a white and black beacon on the northern extremity of this point. Off the mouth of Cameron Bight, the pile foundation of the old Spanish River Lumber Company's wharves are still standing. The western
25 extremity of Cameron Bight is called **Jacob Point**, whence the shore trends in a general westerly direction $1\frac{3}{4}$ miles to **Baxter Point** situated a quarter of a mile south from the southeast extremity of Passage Island.

Schultz Island, 22 feet (6^m7) high, small and round, with a small dry rock
70 yards (64^m0) north of it, lies a quarter of a mile southeastward from the east
30 end of the southeast Otter Island, and helps to point out the passage.

From Schultz Island, the north coast of Aird Island continues in a westerly direction $1\frac{1}{2}$ miles, where it abruptly turns northward. For more than three-quarters of a mile westward of Schultz Island the water is deep, and here a vessel will find good anchorage if wishing to wait for daylight.

Passage Island (Lat. $46^\circ 09' N.$, Long. $82^\circ 26' W.$) is the island on either
35 side of which there is a good channel for the largest vessels. It is half a mile long east and west, and half that distance broad, the east end being steep-to. The channel between it and Shanly Island is a quarter of a mile wide, with a depth of 11 fathoms (20^m1).

Beacon.—A white beacon with black top stands on the north point of
40 Passage Island.

Brown Island, about 50 feet (15^m2) high, is now joined to **Villiers Island**, west of it, by a narrow, low rocky isthmus. The two islands are quite narrow
45 and together a little over three-quarters of a mile long, east and west, the water being deep on all sides.

Otter Islands, two in number, lie northwest and southeast of each other the eastern one being separated from Villiers Island by a good passage 150 yards (137^m2) wide, with a depth of $4\frac{1}{2}$ fathoms (8^m2). This channel will be recognized
50 by the round rock, 15 feet (4^m6) high, lying close to the west extremity of Villiers Island.

Chart 2287.

Jackson Island, three-quarters of a mile long, east and west, is the western of the string of islands lying north of Aird Island being separated from the western portion of the latter by a narrow boat passage.

Klotz Island, about 100 feet (30^m5) high and separated from the west extreme of Aird Island by a narrow and shallow boat channel, is a mile long, and a quarter of a mile in average width. 5

Newport, a small fishing station, is situated on Klotz Island at the north end of the channel between Klotz and Rainboth Islands. There is a small wharf here at which there is 12 feet (3^m7) of water. 10

Casey Shoal, with 13 feet (4^m0) of water on it, lies two-thirds of a mile northwest from the mouth of the channel above mentioned, leaving a depth of 15 fathoms (27^m4) between the shoal and Klotz Island.

Rainboth Island is round and a third of a mile in diameter, being divided from Klotz Island by a narrow boat channel. 15

A cluster of small islands and rocks lies 300 yards (274^m3) southwestward from Rainboth Island, and westward the same distance from these rocks lies a shoal with 9 feet (2^m7) least water over it.

Mouse Island is perfectly bare, of a light brown colour, 35 feet (10^m7) high, and derives its name from the quantity of mice that abounded on it at the time of the survey in 1887; it lies one mile south of the western extreme of Klotz Island. A bank, the shoalest part of which has 2 feet (0^m6) over it, extends over one-third of a mile eastward from Mouse Island. A dry rock lies nearly half a mile northeastward from the same island. 20

Bergin Rock, with 11 feet (3^m4) on it, lies southwestward a little less than two-thirds of a mile from Mouse Island. A patch, with 17 feet (5^m2) over it, lies southwesterly over a third of a mile, and another with 15 feet (4^m6) lies westward rather over three-quarters of a mile from Mouse Island. The space northward of Dalrymple and Mouse Islands is so occupied by rocks, dry, awash and sunken, that a stranger should avoid it altogether. 30

Dalrymple Island is 65 feet (19^m8) high, slightly red in colour, bare of trees, and stands well southward of any other island, circumstances which render it a good mark in the navigation of this part of the coast. It lies almost in the line passing through Clapperton Island lighthouse and the north extremities of Innes and Darch Islands, bearing 288° , distant 13 ($11\frac{1}{4}$ nautical) miles from Clapperton Island lighthouse and 096° , $10\frac{3}{4}$ (9 nautical) miles from Scott Island. 35

A patch, with 17 feet (5^m2) on it, lies eastward a quarter of a mile from the eastern point of Dalrymple Island, and another, with 15 feet (4^m6), lies northward 250 yards (228^m6) distant from the island. A rock, awash, lies 50 yards (45^m7) south of the western end of the island, with which exception the south coast of the island is steep-to, there being a depth of 10 fathoms (18^m3) at 100 yards (91^m4). A bare rock, 5 feet (1^m5) high, is situated northward 250 yards (228^m6), from the northwest extremity of Dalrymple Island. 40

South Coast of Aird Island.—From its western extremity the coast trends eastward $4\frac{3}{4}$ miles, in an almost straight line to Galbraith Point. It is indented by numerous small bays and is fronted by a shallow bank covered by many islands and rocks. 45

Chart 2287.

Galbraith Point, on the south coast of Aird Island, is situated nearly a mile westward of the highest Ferguson Island, and lying off it are several rocky patches none of which are very shallow. A spot, with 19 feet (5^m8) over it, is the shoalest and outermost of these, and lies southward distant three-quarters of a mile from Galbraith Point.

From Galbraith Point, the coast curves northward, half a mile, then eastward one mile to the southeastern point of the island, forming a shallow bay studded with rocks on the line of the entrance points.

Ogilvie Island, the westernmost of the chain of islands situated on the edge of the bank bordering the south side of Aird Island, lies nearly one mile northeast from Dalrymple Island, and a rock, with 6 feet (1^m8) of water on it, lies nearly half a mile westward from it.

Fawcett Island, about the same size as the last mentioned, lies halfway between Conmee and Ogilvie Islands; and south of it 250 yards (228^m6) is a patch with 14 feet (4^m3) over it.

Conmee Island, the next east and largest of the chain, about 40 feet (12^m2) high, lies one and a half miles northeastward from Dalrymple Island, and three-eighths of a mile from the coast of Aird Island.

Lyon Island is the easternmost but one of the group, and lies three-eighths of a mile eastward from Conmee Island. The coast between Galbraith Point and Lyon Island, behind Flint and Billa Rocks, is broken up into a number of shallow bays. A rock, with 14 feet (4^m3) of water on it, lies southward rather over a quarter of a mile from the southwest extremity of Lyon Island.

Billa Rocks, bare and small, lie one and a quarter miles westward from Galbraith Point, the southern one, awash, nearly half a mile from shore.

Flint Rocks, also bare and small, are situated with the southernmost one, 2 feet (0^m6) high, westward three-quarters of a mile from Galbraith Point.

Ferguson Islands are a group partially wooded, the largest and highest of which, 27 feet (8^m2) high, is situated 274°, 1 $\frac{2}{3}$ miles from Boyd Island old lighthouse. With buoys, a vessel might pass between these islands and Aird Island, but the channel is so tortuous that the passage close to Boyd Island old lighthouse is far preferable. The following sunken rocks lie relatively to the highest Ferguson Island:—A patch, with 15 feet (4^m6) of water over it, southeastward, three-quarters of a mile.

Rose Rocks, with 3 and 9 feet (0^m9 and 2^m7) on them, respectively, southward a little over a third of a mile.

St. Paul Rock, with 15 feet (4^m6), and a patch with 9 feet (2^m7) southward two-thirds of a mile, and southwestward a quarter of a mile, respectively.

Shanly Island (Lat. 46° 09' N., Long. 82° 25' W.) on the northern side of Aird Island lies southwestward of Green Island, being separated therefrom by a narrow boat channel. It is two-thirds of a mile long with an average breadth of 300 yards (274^m3) and of considerable elevation, its southeast side being of a cliffy character.

Beacon.—A white beacon, with red top, stands on the southern point of Shanly Island.

Chart 2287.

Green Island, 163 feet (49^m7) high, and wooded, lies on the north side of Whalesback Channel, and westward of the channel to Spanish River, described on page 316; it is 1½ miles long in a northeasterly and southwesterly direction, by two-thirds of a mile wide in its widest place, and its southeast side has deep water close to it. 5

Westward of Green Island are three islands, the southern and smallest of which is named **Wilfrid**, and the central and largest called **Laurier Island**. The passage between them and Green Island is fit only for boats, the same remark applying equally to the channel between Laurier Island and the northern one named Gervase Island. 10

Gervase Island, a narrow and partially-wooded island, is of importance as lying not far southward of the track of vessels to Buswell wharf from the west. Its northwest extremity, consisting of a round rock, 13 feet (4^m0) high, is situated 1½ miles southwest from Buswell Point and the same distance westward from the northern point of Green Island. 15

A rock, with one foot (0^m3) of water on it, lies northwestward 200 yards (182^m9) from the dry rock at the northwest extremity of Gervase Island; and the shoalest part 14 feet (4^m3) of a mud bank lies three-quarters of a mile eastward from the same dry rock. 20

Sproule Islands, the western and smaller of which is 13 feet (4^m0) high, are two in number lying 230 yards (210^m2) northeastward of Green Island, the passage between them and that island having a depth of 16 feet (4^m9). Vessels were formerly in the habit of taking the shorter track to Buswell mill in preference to passing northward of Sproule Islands, where there are 4 to 5 fathoms (7^m3 to 9^m1) of water. 25

A rock, with 4 feet (1^m2) of water over it, lies 100 yards (91^m4) westward from the western Sproule Island, to lead southwest of which, with 17 feet (5^m2) of water, keep Landry Point, hereafter mentioned, closed with the northeast extremity of Green Island, bearing 163°. 30

A reef, with 11 feet (3^m4) on it, is situated westward a little over one-third of a mile from the northeast extremity of Green Island.

Craftsman Point is the first projection northward after passing through Little Detroit, from which it is distant a quarter of a mile, a bight between them, having deep water close to the shore. 35

Landry Point is situated northward half a mile from Craftsman Point, the shore between them forming a deep bight. The coast of the peninsula now runs northward for a quarter of a mile forming with the coast of Green Island a strait 260 yards (237^m6) wide in its narrowest part, with a depth of 4 fathoms (7^m3); the coast now turns away eastward with several coves and points for nearly 3 miles forming the south shore of Frenchman Bay, along which can be carried to within two-thirds of a mile of the head, not less than 3 fathoms (5^m5). 40

Whiteaves Island, small and wooded, is the western one of a string of islands separating the approach to Spanish River from Frenchman Bay; it lies north a quarter of a mile from the western Sproule Island with 4 to 5½ fathoms (7^m3 to 10^m1) between. A reef makes out 200 yards (182^m9) from the west side of Whiteaves Island, and shoal water extends 100 yards (91^m4) from the south side. A small rock, 3 feet (0^m9) high, lies 100 yards (91^m4) eastward of the island. 45

Chart 2287.

Fletcher Islands are a group of three, lying a third of a mile eastward from Whiteaves Island, and a quarter of a mile southward of the group, is a small islet, 10 feet (3^m0) high, known as **Forbes Island**, marking the north edge of the channel to Frenchman Bay.

Tomlinson Islands, two in number, are situated half a mile eastward of the above group; an islet, 23 feet (7^m0) high, lies 200 yards (182^m9) southwest of the western and smaller island.

Frenchman Island, 50 feet (15^m2) high, the easternmost and largest of the string being over three-quarters of a mile long, is separated from the mainland by a narrow passage, but deep enough to raft logs into Frenchman Bay.

Spanish River.—The origin of the foreign name given to the river is obscure, but one reason assigned to it is that a Spaniard from Mexico settled over a century ago on the upper waters of the river, marrying the daughter of an Indian chief. The wharf on the north side of the mouth of the river, in ruins, is situated 2½ miles eastward from the west extremity of Buswell Point, and close to the mouth is Spanish station of the Sault Ste. Marie branch of the Canadian Pacific Railway. The depth of 3 fathoms (5^m5) can be carried only to Fletcher Islands, one mile eastward of Buswell Point, but light-draught streamers enter the river and proceed as far as the first rapids, 10 miles from the mouth. Tugs are employed by the lumber companies in towing to their respective mills the large quantity of logs annually cut near the upper waters of this river.

Wharf.—At Spanish is a Government wharf with a frontage of 191 feet (58^m2) and a depth of 7½ feet (2^m3) (below 578·5) along the face.

From the wharf at the mouth of Spanish River the shore, 151 to 97 feet (46^m0 to 29^m6) high, runs nearly straight in a series of cliffs to **Buswell Point** and is shallow.

Buswell wharf is situated in a bay immediately northward of the point of that name, its outer end being in 1887 only 120 yards (109^m7) northwestward therefrom. The wharf at that time was nearly a quarter of a mile long and had a depth of 12 feet. Its distance by the channel from Little Detroit is about 3 miles.

In the approach to the wharf is a rocky patch, with 9 feet (2^m7) of water on it (in low stages there may be 6 feet (1^m8) less), situated a quarter of a mile southeasterly from Buswell Point.

Indian John Point is a low broad projection three-quarters of a mile west of the wharf, and 150 yards (137^m2) southward of this point is the eastern and largest one of a chain of five islands, called Kirke Island.

The east point of **Kirke Island** is a third of a mile distant from Buswell Point, the line joining them marking the limit of the depth of 3 fathoms (5^m5). Shallow water extends 250 yards (228^m6) from its south side. This island is seven-eighths of a mile long and has a maximum width of 400 yards (365^m8).

Directions.—**Little Detroit to Buswell wharf.**—After passing through Little Detroit (*see* page 311) give Craftsman Point a berth of 200 yards (182^m9), and head about 360° for the passage; when at the narrows between Landry Point and Green Island, keep mid-channel, and passing east and 200 yards (182^m9) northward of Sproule Islands, steer 282°, until the mill stack (if standing) opens, or comes in line with Buswell Point, bearing about 030°, when it may be steered for, and a berth taken up at the wharf.

Chart 2287.

A vessel can carry 16 feet (4^m9) between Green and Sproule Islands by keeping mid-channel, and taking care to pass southwest of the rock near the western Sproule Island, by keeping Landry Point closed with the northeast end of Green Island, bearing 163°; when west of this rock, steer for Mount Victoria about 327°, until the stack and Buswell Point come in range when proceed to the wharf. 5

Gulnare Point (*Lat. 46° 10' N., Long. 82° 27' W.*) is the termination of a thickly-wooded peninsula about 150 feet (45^m7) in height and may be approached to 200 yards (182^m9). The point is situated a little over 3 miles westward from Buswell Point, the shore between taking the form of a shallow bight, hidden from sight by a chain of islands the eastern and highest of which, Kirke Island, is described on page 316. 10

Brewerton Island, the western one of the chain, is separated from Gulnare Point by a channel one-third of a mile wide, containing a depth of from 5 to 7 fathoms (9^m1 to 12^m8), muddy bottom. The coast of Brewerton Island, and those of the three others between Kirke Island and it are steep-to. 15

Aird Bay is a deep indentation of the north shore, contained between Papineau Island on the east and Bartlett Point nearly 3 miles west of it; from the middle of this line the bay trends northeast 3 miles. 20

Cutler, a post office and station on the Sault Ste. Marie branch of the Canadian Pacific Railway, is situated at the head of Aird Bay. There are the ruins of an old sawmill with shipping wharves at which there is a good depth of water.

Papineau Island is triangular-shaped, the north side being cliffy and about 100 feet (30^m5) high. It is separated from Gulnare Point by a shallow channel 300 yards (274^m3) broad, and its south extremity though low and sharp may be approached to 100 yards (91^m4). 25

Curran Rock, awash, is situated northwestward a little over three-quarters of a mile from Papineau Island, being nearly in the middle of the bay.

Beacon.—A square concrete beacon, about 9 feet (2^m7) high, stands on this rock. 30

Jamieson Island is situated 150 yards (137^m2) northward of Papineau Island, and with it helps to form the west side of the approach to a shallow inlet known as **Coursol Bay**.

Lister Island, small, bushy and 15 feet (4^m6) high, lies 150 yards (137^m2) from the east shore a mile northward of Papineau Island; a small rock, with depth of 7 feet (2^m1), lies 150 yards (137^m2) westward of Lister Island. 35

Casgrain Rock, 4 feet (1^m2) high, lies nearly half a mile westward from Lister Island and nearly a mile northeastward of Curran Rock.

Mount Victoria is a bare hill with three summits, the middle and highest of which is 482 feet (146^m9) high, and situated 2 $\frac{1}{4}$ miles northeastward of Cutler. A Provincial Forestry Service lookout is located on the highest summit. 40

From Cutler, the northwest shore of Aird Bay trends in a general south-westerly direction 3 $\frac{1}{2}$ miles to **Bartlett Point**. On this shore are three slight projections known as **Forwood, Ellis, and Ashmead Points** which may be approached to 200 yards (182^m9). The latter is 1 $\frac{1}{2}$ miles northeastward of 45

Chart 2287.

Bartlett Point and midway between them and a quarter of a mile from the shore is a small rock, 7 feet (2^m1) high. A rock, with less than 6 feet (1^m8) on it, lies 200 yards (182^m9) from the east side of Bartlett Point.

- 5 **Hird Rock**, awash, lies a little over three-quarters of a mile eastward from Bartlett Point and a quarter of a mile southward from the dry rock, 7 feet (2^m1) high, above mentioned.

Directions.—During the survey in 1887 the steamer *Bayfield* used to enter Aird Bay from the west as follows:—

- 10 From Nicholas Island, a course 079° with Papineau Island and Gulnare Point ahead was steered for 4 $\frac{1}{4}$ miles, until the highest part of Mount Victoria was open southeast of Curran Rock, bearing 032°. This course led close south-east of Curran and Casgrain Rocks, and northwest of the shoal ground about Lister Island and **Rykert Point**.

- 15 The line of the leading beacon and freight shed, when discernible, bearing 019°, is now the leading mark.

A vessel leaving the wharf may pass northwest of Casgrain and Curran Rocks, and southeast of Hird Rock, with not less than 4 fathoms (7^m3), by keeping the wharf directly astern and **Moiles Mills** exactly ahead, bearing 223°.

- 20 From Bartlett Point, the main shore trends 6 miles in a general westerly direction to **Wicksteed Point** and is indented by several bays and points.

- Norquay Island** lies half a mile north of the Whalesback Channel track from Little Detroit to Turnbull Island, and lies with its eastern end nearly 4 $\frac{1}{4}$ miles from Whalesback and three-quarters of a mile southwest from Bartlett Point. This and **Greenway Island** 200 yards (182^m9) west of it are each about 25 100 feet (91^m4) high, and half a mile long east and west with precipitous sides.

White Island, 76 feet (23^m2) high, and 120 yards (109^m7) northward of the eastern part of Greenway Island, has a conical summit, the quartz of which it is composed giving it the conspicuous appearance whence it derives its name.

- 30 **Spotted Island** is so called from the circumstance of its being patchy, especially on the northern side. It is about 30 feet (9^m1) high, 200 yards (182^m9) in length, and lies a little more than a quarter of a mile westward of Greenway Island.

- Daly Islands** are two islands; the western one has a conical summit 53 35 feet (16^m2) high, which with its perpendicular south side, renders it a conspicuous object, especially to a vessel using the channel northward of the island next described.

- Parsons Island**, about 60 feet (18^m3) high in two principal parts, is situated with its northeast extremity 1.9 miles eastward of Whalesback; a passage 40 exists on the north side of the island, but on account of a rock, with 6 feet (1^m8) of water on it, lying northward distant 350 yards (320^m0) from the west extremity, it is better for a stranger to use the broader and generally used channel southward of Parsons Island.

- The southeast side of the island has several dry rocks and islets lying off it, 45 the farthest being a small rock, 7 feet (2^m1) high, situated 350 yards (320^m0) from its east end and alluded to in connection with Nicholas Island (*see* page 321). A small rock, with 8 feet (2^m1) of water upon it, lies 225 yards (205^m7) south-westward from the west end of Parsons Island, and is a very awkward danger for vessels passing north of Nelles or Robin Islands. It is marked by a red spar 50 buoy.

Chart 2287.

Robin Island, small, round and 25 feet (7^m6) high, lies westward nearly a third of a mile from the western extremity of Parsons Island; and 300 yards (274^m3) west from Robin Island is a rock, with 9 feet (2^m7) of water on it.

Nelles Island, in two parts, with a round rock near the west end of the larger island, 11 feet (3^m7) high, is situated a quarter of a mile northward of Camp Point (*see* page 321). There is deep water on either side of these islands, but the 9-foot (2^m7) rock mentioned in the last paragraph makes it advisable for a stranger to adhere to the passage southward of Nelles Islands. White and red bulls-eyes are painted on the above round rock. 5 10

Whalesback Island, a bare precipitous rock, has a shoal with 24 feet (7^m3) of water over it lying 300 yards (274^m3) westward from its western and lower end, but with this exception the water is deep all around it, and between it and Nelles Islands. There are several other islands lying between the string just described and the main shore, but as the passages among them are not to be recommended, their description has been deemed unnecessary. White and red bulls-eyes are painted on Whalesback Island. 15

Buoy.—A black spar buoy marks the south side of the channel opposite Whalesback Island.

Fraser Rocks, the highest being 8 feet (2^m4) high, lie nearly two-thirds of a mile westward from Whalesback, and 350 yards (320^m0) off Wicksteed Point of the main shore; the channel is southward of these rocks which are steep-to on that side. 20

Turtle Rock (*Lat.* 46° 09' N., *Long.* 82° 39' W.), 13 feet (4^m0) high, is situated westward 1½ miles from Whalesback; the water is good all around the rock, but the deeper and more direct track for a vessel is south of it. White and red bulls-eyes are painted on this rock. 25

Page Rocks consist of two, the eastern being one foot (0^m3), while the western is 6 feet (1^m8) high. They are 350 yards (320^m0) apart, the western one being a quarter of a mile off the main shore, over three-quarters of a mile west from Turtle Rock and one and a quarter miles westward from Wicksteed Point. 30

Chapman Reef, with 14 feet (4^m3) on it, lies a quarter of a mile southwestward from the western Page Rock and three-eighths of a mile from the main shore. A red spar buoy marks this reef.

Knight Point, 2½ miles west of Wicksteed Point and 3⅔ miles westward from Whalesback, is the westerly termination of the comparatively straight shore of the mainland about 100 feet (91^m4) in height, forming the north side of Whalesback Channel. Thence, the shore abruptly turns northward in a succession of long bays. 35

Godfrey Islands are a group of three, the western of which is 22 feet (6^m7) high and lies rather over half a mile southwestward from Knight Point; a small rock, with less than 6 feet (1^m8) of water on it, lies 150 yards (137^m2) southwestward of it. Otherwise the islands are steep-to on the channel side. 40

La France Rock, with 11 feet (3^m7) of water over it (in low stages there may be 6 feet (1^m8) less), lies nearly three-quarters of a mile southward from Knight Point and a little over one-third of a mile in the same direction from the eastern extremity of the southeastern Godfrey Island. It has deep water all around it. 45

Chart 2287.

Buoy.—A red spar buoy marks La France Rock.

Prendergast Islands, three in number, are situated one mile westward of Knight Point, and are the most westerly islands in this locality; they are steep-to on the west and south sides.

John Island, the largest west of Aird Island, is 250 feet (76^m2) high, and its north side forms the south side of Whalesback Channel. It is $4\frac{2}{3}$ miles long east and west, with a maximum breadth of nearly $1\frac{1}{2}$ miles.

Beaufort Island, low and wooded, lies near the southeast extremity of John Island being separated therefrom by a boat channel 200 yards (182^m9) wide. A bank, under the depth of 18 feet (5^m5) extends half a mile from the east sides of this and John Island.

Tern Island, a rather conspicuous dark-coloured islet, 17 feet (5^m2) high, lies northwesterly nearly three-quarters of a mile from the west extremity of Beaufort Island, and is steep-to on its south, southwest, and northwest sides.

Fisher Island, low and thickly wooded, is situated off the south coast of John Island and a little over a quarter of a mile northward of Tern Island, and 260 yards (237^m6) southwest from the former is situated a small rock, 2 feet (0^m6) high, and 350 yards (320^m0) from the main coast of John Island.

The south coast of John Island, from Fisher Island, assumes a smoother character, running in a westerly direction nearly straight for $1\frac{3}{4}$ miles with deep water off it, to the eastern entrance to John Harbour.

Beaufort Reef is a group of stones 2 feet (0^m6) high, lying on the southern termination of this bank 350 yards (320^m0) south of Beaufort Island, and from the east side of these boulders a reef, with 4 feet (1^m2) on it, extends 350 yards (320^m0); the south side of the stones may be approached to 300 yards (274^m3). A shallow sandbank extends from Beaufort Island to East Entrance to Moiles Harbour, to keep east of which *see* page 321.

This shoal bank, around Beaufort Island, continues westward; a spot, with 2 feet (0^m6) of water on it, lies southwest a little more than a third of a mile, while another, with 5 feet (1^m5) on it, lies westward a little more than half a mile from the western extremity of Beaufort Island. The latter spot also lies a quarter of a mile southeast from Tern Island.

Aikens Island is the next west of Rainboth Island; between them, there is a passage for a ship, but as a rock, with 9 feet (2^m7) of water over it, lies in the middle of the passage it is not recommended to a stranger. Aikens Island is a little over a mile in length east and west, and helps to shelter Moiles Harbour presently to be described.

Amyot Rocks are a cluster 3 feet (0^m9) high, lying from 200 yards (182^m9) to a quarter of a mile northwestward of the east extremity of Aikens Island.

A rock, with 12 feet (3^m7) on it, is situated a third of a mile northward from the same extreme.

Weldon Shoal, with 18 feet (5^m5) of water on it, lies 350 yards (320^m0) northwest from the western Amyot Rock.

Chart 2287.

Moiles Harbour, a perfectly sheltered basin, is situated near the eastern extremity of John Island, and contains the ruins of an old sawmill and slab wharves. Two passages lead into it, that from Whalesback Channel taking the name of North, and the other, from North Channel to Lake Huron, being called East Entrance. By the former 4 fathoms (7^m3) may be carried in, and by the latter 14 feet (4^m3), while at the wharves ample water may be had. 5

Bergeron Point is the most easterly projection of John Island on the Whalesback Channel side, being separated from Aikens Island by a small island between which and Aikens Island is the north entrance of Moiles Harbour. 10

Directions.—A vessel bound to Moiles Harbour from Mississagi Strait (*see* page 56) should pass a quarter of a mile northwest of Meldrum Point, and thence steer 071°, which leads over one mile northward of Batture Island (*see* page 351) and 1¼ miles southeast from Europa Reef (*see* page 327).

After running on this course for 32 (28 nautical) miles, a vessel will arrive at the 10-fathom (18^m3) line, half a mile southeast of Beaufort Reef, and with Mount Victoria over the middle of Rainboth Island, bearing 034°. Proceed on this leading mark for 1½ miles, when the vessel should be abreast East Entrance to the harbour, distant half a mile westward. 15

If approaching Moiles Harbour by North Entrance, from Whalesback Channel care should be taken to pass westward of the rock, with 5 feet (1^m5) on it, lying 150 yards (137^m2) off the northwest point of Aikens Island. 20

Coast.—From Bergeron Point, the north coast of John Island trends westward two-thirds, and then northward half a mile to **Davin Point**, with deep water close to the shore excepting at the latter point itself where a rock, with 10 feet (3^m0) of water on it, lies 100 yards (91^m4) off. 25

Flood Island (*Lat.* 46° 09' N., *Long.* 82° 34' W.) is small, 20 feet (6^m1) high, and the water is deep close to the north side. It lies one-quarter of a mile northwest of Davin Point.

Nicholas Island is somewhat similar but lower, and is situated a little over a third of a mile westward of the latter, and southeastward 320 yards (292^m6) from a round, conspicuous rock, 7 feet (2^m1) high, on the north side of the passage, close to which the water is very deep. It is locally known as Berrypicker Rock, and has a red and white bulls-eye painted on it. A rock, with 5 feet (1^m5) of water on it, lies westward 150 yards (137^m2) from Nicholas Island, limiting the breadth of the channel to 200 yards (182^m9). It is marked by a black spar buoy. 30 35

Waters Point is one-third of a mile westward of Nicholas Island, and 100 yards (91^m4) off it is a rock, with one foot (0^m3) of water on it; the channel between this shoal point and Parsons Island being narrowed to 250 yards (228^m6) but with a depth of 13 fathoms (23^m8). 40

Buoy.—A black spar buoy is moored off the point.

Camp Point is one mile westward of Waters Point, and east of it are two coves off which a flat extends 150 yards (137^m2).

West Point is the western extremity of John Island; it is situated nearly a mile southwest from Whalesback and nearly 1½ miles from Camp Point. 45

Chart 2287.

Dixon Islands, two in number, are about 15 feet (4^m6) high with a few trees on them. The northern one is a third of a mile southwest from Whalesback, and between the two is the channel. A white and black bulls-eye is painted on the north point of the northern island. A rock, awash, lies a third of a mile eastward from the north Dixon Island and 360 yards (329^m2) southward from Whalesback. Keeping the latter close on board will avoid this danger, as will also the north point of John Island in line with the south point of Nelles Island, bearing 090°. The northern side of this rock is marked by a black spar buoy.

10 **Goalen Island**, 15 feet (4^m6) high, lies 350 yards (320^m0) northward from West Point.

Bradley Rock, with 3 feet (0^m9) of water over it, is a very awkward danger, having already brought up several vessels; the whole bank is 350 yards (320^m0) long east and west, the western end being the shoaler. The latter spot lies westward one-third of a mile from Goalen Island, and the track is between it and Fraser Rocks (*see page 319*).

Clearing mark.—To pass northward of Bradley Rock, keep the north side of John Island (Waters Point) open northward of the northern Dixon Island, bearing 084°.

20 **Buoy.**—A black spar buoy is moored on the northern side of Bradley Rock.

John Harbour.—The north side of this excellent haven is formed by the southwest coast of John Island, while it is sheltered on the south by a narrow island a little over 2 miles long called Dewdney Island.

Harbour Island, small and 3 feet (0^m9) high, lies 300 yards (274^m3) eastward of Dewdney Island, being connected therewith by a reef, over which not more than 6 feet (1^m8) can be carried. The eastern entrance to the harbour is north-eastward of Harbour Island and has a depth of 14 feet (4^m3) (in low stages there may be 6 feet (1^m8) less).

Sandy Point is the first projection of John Island after passing westward of Harbour Island; to and from this point a sand-spit makes out two-thirds the way across to Dewdney Island, leaving near the latter a channel with the depth above mentioned. A little over half a mile northwest from Sandy Point is a small green point on John Island, close to which is a depth of 4 fathoms (7^m3); and the light between these two points should not be approached nearer than 100 yards (91^m4). From this green point, the coast of John Island runs in the same direction nearly straight to the narrows separating John Island from Gowan Island.

Gowan Island, 88 feet (26^m8) high, is the first west of John Island, being separated therefrom by a boat channel 100 feet (30^m5) wide. It is almost denuded of trees, and its south point narrows the west entrance to the harbour to 220 yards (201^m1), when, by keeping rather nearer to Dewdney than to Gowan Island a depth of 22 feet (6^m7) can be obtained; a rock, awash, lies 70 yards (64^m0) off the western extremity of Gowan Island. A rock, with 14 feet (4^m3) over it, is situated 350 yards (320^m0) from the same extremity, and 200 yards (182^m9) from Dewdney Island.

Close to the harbour side of **Dewdney Island** and 350 yards (320^m0) west from the east extremity lies a small round rock, one foot (0^m3) high, known as **Pancake Rock**, 70 yards (64^m0) northwest of which and 50 yards (47^m7) offshore is a rock, with less than 6 feet (1^m8) over it. Three-quarters of a mile west from the east extremity, the harbour coast of Dewdney Island turns southwestward,

Chart 2287.

forming a cove 250 yards (228^m6) deep with two islands and a cluster of dry rocks lying across the mouth. From the eastern point of the larger island, a reef extends in a northeasterly direction 250 yards (228^m6), at which distance there is a depth of 10 feet (3^m0), leaving a channel 4 fathoms (7^m3) deep and 150 yards (137^m2) wide between it and the green point previously described. To pass northeast of this reef, keep the north side of Harbour Island touching Sandy Point, bearing about 123°. 5

Anchorage.—A vessel may anchor in 4 fathoms (7^m3) mud bottom, eastward of this reef, or in 5 fathoms (9^m1) westward of the same, or northward of the cove in Dewdney Island just mentioned. 10

From the latter cove, the north coast of this island runs westward straight one mile to the west end, which is surmounted by a bare summit 67 feet (20^m4) high. This extremity of the island is distant 300 yards (274^m3) from Le Sueur Island (*see below*) and midway between them is a small islet with a cluster of dry rocks on its south and east sides, the highest and southernmost of which attains a height of 22 feet (6^m7). A depth of 8 feet (2^m4) can be carried between this cluster and Dewdney Island, and 7 feet (2^m1) between it and Le Sueur Island. 15

Dewdney Rock, with 3 feet (0^m9) of water over it, is a dangerous obstruction two-thirds of a mile from the nearest part of Dewdney Island and southwestward from its east extremity. A rock, with 11 feet (3^m4) on it, lies half a mile southwest from the same extremity. 20

Directions.—If from the southeast, a vessel may carry 14 feet (4^m3) into this harbour by keeping midway between Harbour Island and the John Island shore. Having passed the former, haul over for the east extremity of Dewdney Island, steaming slowly and with the lead going, keep 50 yards (45^m7) or less from this island until up to Pancake Rock, when the shallow spit extending from Sandy Point of John Island will be passed. Steer now for the little green point on the latter island, taking care as it is approached to keep the north side of Harbour Island touching, or closed with Sandy Point, bearing about 123°, in order to clear the 10-foot (3^m0) reef extending northeastward from the east point of the cove in Dewdney Island. 25 30

Pass 100 yards (91^m4) off the green point and then borrow toward Dewdney Island, until in mid-channel, when a vessel may anchor in 5 fathoms (9^m1) mud bottom, or proceed through into Whalesback Channel by keeping midway between the islands on a course parallel to the north coast of Dewdney Island, until the south point of Gowan Island is reached, whence a mud bank extends half way to the former, but over which, outside of 50 yards (45^m7) from Gowan Island, there is not less than 3 fathoms (5^m5). A vessel may now haul out into Whalesback Channel between Le Sueur and Gowan Islands. 35 40

If from the northwest, reverse the preceeding directions.

Le Sueur Island (*Lat.* 46° 08' N., *Long.* 82° 40' W.), a little lower in height, lies westward of Gowan Island, the nearest extremities being half a mile apart and between which is the entrance to John Harbour. Le Sueur Island is a third of a mile in diameter, the north shore having deep water close to it. The water is also equally deep between it and **Colmer Ground**, the name given to a patch with 21 feet (6^m4) on it lying nearly half a mile northwestward of its northwest extremity. 45

A group of three islands, named respectively, commencing from eastward, **Alfred, DeCelles, and David Islands**, divides Whalesback Channel from the broader waters of North Channel of Lake Huron, and there is no passage between 50

Chart 2287.

these three islands except for boats. The eastern extremity of Alfred Island is situated half a mile south of the west extremity of Le Sueur Island and the three islands extend east and west, a little over one mile.

- 5 **David**, the smallest and western island, has a rock, with 15 feet (4^m6) on it, lying 300 yards (274^m3) north of it. A rock, 9 feet (2^m7) high, is just separated from the west point of the island.

A shoal, with about 4 feet (1^m2) of water on it, lies nearly 600 feet (182^m9) southwest of the southwest extreme of David Island.

- 10 **Mills Island**, 58 feet (17^m7) high and about 120 yards (109^m7) in diameter, is separated from the group last mentioned by a channel over one-third of a mile wide. With the exception of a rock, with less than 6 feet (1^m8) of water on it, lying 50 yards (45^m7) off its northwest side, the island is steep-to.

Beacons.—There are white beacons on Mills Island.

- 15 **Acadia Rock**, with 14 feet (4^m3) on it, lies two-thirds of a mile southwestward from the east extremity of Alfred Island (*see* page 323).

- Scott Island**, 150 feet (45^m7) high, is over a third of a mile long east and west, and a quarter of a mile wide. It is a conspicuous feature commanding the approaches to Serpent River and Algoma Mills from the southwest and south-east, in which connection *see* page 333. It is situated over three-quarters of a mile westward of Mills Island, and the ridge joining them, having no less than 6 fathoms (11^m0) on it, affords a good passage, taking the name of Scott Passage, into or out of Whalesback Channel.

- 25 **Peters Islands**, two in number, quite low and 200 yards (182^m9) apart, lie 250 yards (228^m6) northward of Scott Island; one rock, awash, lies close to the east end of the eastern island, and a second is situated 180 yards (164^m6) southeast from the same extremity.

- 30 **Sylvain Island**, 43 feet (13^m1) high, lies southwestward half a mile from Whitcher Island. A small, wooded islet lies 250 yards (228^m6) eastward of the island, and close to the east side of this islet the water is deep, leaving a good channel a third of a mile wide between it and Whitcher Island. The northwest side of Sylvain Island should not be approached within 150 yards (137^m2), a shallow ledge making out nearly that distance. The water is deep on the north and south sides of both islands.

- 35 **Beacons.**—There are white beacons on Sylvain Island.

- 40 **Whitcher Island**, 300 yards (274^m3) long north and south, by 200 yards (182^m9) broad, is situated northward two-thirds of a mile from Mills Island, the water between them being 18 fathoms (32^m9) deep. This island may be known by a rock, 4 feet (1^m2) high, lying 170 yards (155^m5) eastward from its northeast extremity, and which has a rock, with less than 6 feet (1^m8) of water on it, lying 100 yards (91^m4) southeastward of it; with this exception the water is very deep around this island.

Beacons.—There are white beacons on Whitcher Island.

- 45 **Gunboat Shoal**, with 8 feet (2^m4) least water upon it, is one-third of a mile long east and west, by 150 yards (137^m2) broad. The shoalest part is the middle of the bank, distant two-thirds of a mile west from the southwest extremity of Scott Island, and nearly a mile south from the western Minstrel Rock.

Clearing mark.—To pass west of this shoal, keep the west side of Round Island touching the east side of Turnbull Island, bearing 344°.

Chart 2287.

Minstrel Rock, in two parts, 5 feet (1^m5) high, lies northwest a little over half a mile from the same part of Scott Island.

Tug Reef, awash, is situated a quarter of a mile northwestward from the western Minstrel Rock; shoal water extends 150 yards (137^m2) northeastward from the top of this reef. 5

Robb Rocks, 8 feet (2^m4) high, lie north, little under three-quarters of a mile from the west extreme of Scott Island. Westward of them 200 yards (182^m9) is a small rock, 4 feet (1^m2) high, and nearly the same distance eastward is situated a rock, awash. 10

Turnbull Island, a little over three-quarters of a mile long, north and south, 30 feet (9^m1) high and sparsely wooded, will be seen ahead soon after passing westward of Whalesback. It is the eastern of a group of islands lying south of Algoma Mills, and its eastern coast is steep-to, with the exception of a patch on which there is a depth of 11 feet (3^m4), lying 250 yards (228^m6) eastward of the southeast point of the island 15

Buoy.—A black spar buoy is moored on the eastern side of the 11-foot patch.

A rock, with a depth of 3 to 4 feet (0^m9 to 1^m2), lies 263°, distant 4½ cables from the southwestern point of Turnbull Island.

The eastern extremity of **Bassett Island** is situated close north of the northern end of Turnbull Island, to which it is now joined. This island is 30 feet (9^m1) high, half a mile long and nearly one-quarter of a mile wide; its north and east sides are steep-to. 20

Harbour.—The area south of Bassett Island and west of the north end of Turnbull Island forms a splendid harbour for small yachts and other vessels. The harbour is approached from the northwest. 25

For remainder of this group, see page 326.

Directions.—Whalesback Channel.—In passing through Little Detroit from the southeast, keep the northeast or main shore on board to avoid a rocky bank extending from Mary Island and Ethel Rock; when up to the narrows keep in mid-channel, and when round King Point, a course of 258°, for 2 miles, will take a vessel to the west extreme of Shanly Island, or, for 2½ miles, to the west end of Passage Island. Haul northward on either side of the latter and steer 271°, for 7¼ (6¼ nautical) miles, if taking the channel east of Passage Island, when a vessel will be abreast and northward of Nicholas Island. It may be remarked that this course leads over a patch, on which there is 21 feet (6^m4), lying two-thirds of a mile southward from the east end of Norquay Island. 30 35

Passing between Nicholas Island and the small rock, 7 feet (2^m1) high, on the north side, a course of 264° for nearly 1¾ miles will bring a vessel southward and abreast of the detached rock, 11 feet (3^m4) high, at the western extremity of Nelles Island. Passing 150 yards (137^m2) from the latter, haul a little northward, to pass the same distance south of Whalesback, and so avoid the rock, awash, situated as before stated 360 yards (329^m1) southward from Whalesback. 40

From this position, steer 264° to pass 200 yards (182^m9) on the same side of Turtle Rock and avoid Bradley Rock, with 3 feet (0^m9) on it, to ensure which, see that the north shore of John Island is in a line with or open north of the northern Dixon Island, bearing 084°. Turnbull and Bassett Islands will now be seen ahead appearing as one; steer about 270°, rather nearer the south end than the middle of them until past La France Rock, 2½ miles distant, when haul up for the north end of Bassett Island and proceed as directed on page 332. 45 50

Chart 2287.

Islands.—Southward of Algoma Mills is situated a large group of islands of varied size, the eastern called Bassett and Turnbull already mentioned and the central and largest one known as **Clara Island**, which is partially wooded, 5 about 50 feet (15^m2) high, and $1\frac{1}{4}$ miles in length east and west, with maximum breadth of half a mile; the north coast of Clara Island should receive a berth of 250 yards (228^m6).

Loughlin Island (*Lat. $46^\circ 08' N.$, Long. $82^\circ 50' W.$*), with a conical summit 58 feet (17^m7) high, is the southwest of the group, and situated nearly one mile 10 northward from Black Rock. A rock, with 8 feet (2^m4) of water on it, lies a quarter of a mile westward from the north point of Loughlin Island.

Struthers Island, about 30 feet (9^m1) high, lies nearly two-thirds of a mile northward from Loughlin Island, its northeast, southeast, and southwest points being foul for 150 yards (137^m2).

15 **Jane Rock**, 12 feet (3^m7) high, lies southwestward a third of a mile from Struthers Island; midway between the southwest point of the latter and Jane Rock is a patch, with 7 feet (2^m1) of water on it.

Doucet Rock, 10 feet (3^m0) high, is situated nearly a mile westward from Struthers Island and a quarter of a mile southeast of the fairway leading mark 20 through South Passage.

Beacon.—A white beacon, with black top stands on the western side of Doucet Rock.

A rock, with less than 6 feet (1^m8) of water over it, lies approximately 219° , distant $3\frac{1}{2}$ cables, from Doucet Rock.

25 **Buoy.**—A black spar buoy marks the western side of this rock.

Bruce Rock, with 5 feet (1^m5) of water on it, lies a quarter of a mile northwest from the northwest extreme of Struthers Island; and a third of a mile west of Bruce Rock is a patch with $3\frac{1}{2}$ fathoms (6^m4) of water on it.

Buoy.—A black spar buoy is moored $1\frac{1}{2}$ cables northward of Bruce Rock.

30 **Clearing mark.**—The south side of Round Island touching the north side of McCallum Islands, bearing 071° , leads northwest of Bruce Rock; the lower rocks belong to the latter will be a little overlapped with Round Island.

Caroline Island, about 60 feet (18^m3) high, half a mile long northwest and southeast, with a breadth of a quarter of a mile, lies two-thirds of a mile eastward 35 from Loughlin Island.

As there is no passage to be recommended to a stranger through the islands between Turnbull and South Passage, they are unimportant in comparison with the southern chain of high bare rocks and their attendant dangers, of which the most easterly is **Cherub Rock**. This little rock, 3 feet (0^m9) high, is situated 40 southwestward, distant a little over three-quarters of a mile from the southeast extremity of Turnbull Island. A patch with 3 fathoms (5^m5) and another, with 17 feet (5^m2), lie eastward, half a mile, and 300 yards (274^m3), respectively, from Cherub Rock.

45 A rock, with 14 feet (4^m3) on it, lies 350 yards (320^m0) westward from the same, while to the south a depth of 10 fathoms (18^m3) will be found 300 yards (274^m3) distant.

Chart 2287.

Huntley Rock, with 4 feet (1^m2) on it, is situated at the western extremity of a reef, with less than 12 feet (3^m7), one-third of a mile long, the eastern end with 9 feet (2^m7), lying a little over one third of a mile westward from Cherub Rock; a depth of 10 fathoms (18^m3) will be found 300 yards (274^m3) southward of this reef. 5

Fortin Rocks consist of four, the southern of which is one foot (0^m3) high, the northeastern one about 30 feet (9^m1) high, with a few tall trees on it, lies a quarter of a mile northeast from the southern one, and southeast a little over one-third of a mile from the southeast extremity of Caroline Island. A rock, with 8 feet (2^m4) of water over it, lies 170 yards (155^m4) southward of the southern Fortin Rock, falling suddenly to a depth of 17 fathoms (31^m1). 10

Ramsey Islands, three in number, lie half a mile northward from Fortin Rocks; 250 yards (228^m6) southward of the east Ramsey Island is a rock, with 9 feet (2^m7) of water on it, while a quarter of a mile southward from the western islet will be found the western extremity of a reef with depth of 5 feet (1^m5). 15

Chrysler Rocks consist of a string nearly half a mile long northeast and southwest, the northeastern rock, 16 feet (4^m9) high, being the largest and highest. The southwestern rock is situated a little over half a mile eastward from Black Rock. 20

Black Rock is, properly speaking, composed of three small rocks the highest being 12 feet (3^m7) high. It is situated 270° , distant $15\frac{3}{4}$ ($13\frac{3}{4}$ nautical) miles, from the southwest point of Dalrymple Island and 4 miles, 240° from the southwest point of Turnbull Island. With the exception of the next mentioned danger, the water is good all round, the 10-fathom (18^m3) line reaching to within 75 yards (68^m6) on the south, and 150 yards (137^m2) on the northwest side. A rock, with 13 feet (4^m0) of water on it, lies eastward 300 yards (274^m3) from Black Rock. 25

Michels Ground is a patch, with $3\frac{3}{4}$ fathoms (6^m8) on it, situated nearly two-thirds of a mile southward from Black Rock and between them the depth is over 20 fathoms (36^m6). 30

The Cousins are two flat islands, each 5 feet (1^m5) high and lying southeast and northwest, distant 300 yards (274^m3) from each other. The northwestern island bears 156° , and is distant $2\frac{1}{2}$ miles from Black Rock. They are connected with each other by, and surrounded with, shoal water, there being only 10 feet (3^m0), 350 yards (320^m0) westward of the northwest island, while a rock with less than 6 feet (1^m8) on it, lies 300 yards (274^m3) northeastward from the northwest extremity of the same. Shoal rocks lie 300 yards (274^m3) southwest and south from the southeast Cousin. 35

Europa Reef, with 9 feet (2^m7) on it (in low stages there may be 6 feet (1^m8) less), is situated 092° a little more than $1\frac{1}{4}$ miles from the southeast Cousin, while a third of a mile northeastward from the 9-foot (2^m7) spot is another patch— part of the same bank— with 13 feet (4^m0) on it. A depth of 15 fathoms (27^m4) will be found between The Cousins and Europa Reef, and the same between the latter and a bank with 23 feet (7^m0) of water on it, bearing 080° distant $3\frac{1}{2}$ miles from the southeast Cousin Island and known as **Maitland Patch**. 40

Buoy.—A red and black spar buoy marks Europa Reef. 45

Rescue Rock is a dangerous ledge just covered (in low stages it would be 6 feet (1^m8) above the surface), lying a third of a mile southward of the line joining Dalrymple Island and Black Rock. It bears 155° , and is distant $1\frac{1}{2}$ miles

Chart 2287.

from the southwestern extremity of Scott Island; the water is shoal for 100 yards (91^m4) east of the rock and a depth of 5 fathoms (9^m1) will be found 200 yards (182^m9) westward, with which exception, deep water approaches close to the
5 rock, especially on the south and southeast sides; hence great caution is necessary when near it in thick weather.

Buoy.—A red and black spar buoy marks Rescue Rock.

Approach to Serpent Harbour.—Three-quarters of a mile northwestward from Knight Point is situated **Long Point**, the extremity of a long and narrow
10 peninsula extending from the mainland. Between these points is a deep bay called Taschereau Bay, shallow and foul at the head.

Midway between Long Point and Prendergast Islands, already described, is a small island, with a dry rock, 50 yards (45^m7) from its northwest side.

Drew Island (*Lat.* 46° 10' N., *Long.* 82° 43' W.) is small and 23 feet (7^m0) high, being the northwestern one of a group lying half a mile northwestward of
15 Long Point. Drew Island may be approached from the west to 200 yards (182^m9).

Navy Island, 250 yards (228^m6) long northeast and southwest and quite narrow, lies a little over a third of a mile northeast from Drew Island, and may be approached to 200 yards (182^m9).

Cook Island, small, wooded and about 25 feet (7^m6) high, is situated nearly
20 half a mile northeast from Navy Island and, like the latter, it is the outlying one of several islands lying off this part of the coast; the water is deep 200 yards (182^m9) west of it.

Garibaldi Island, 13 feet (4^m0) high and steep-to, is the northeastern one of the group, and is separated by a boat channel, 100 yards (91^m4) wide, from the
25 peninsula on which is situated an Indian village.

Emerald Point, on the south shore, lies northeasterly nearly two-thirds of a mile from Garibaldi Island, and is steep-to; near the shore of the cove south of the point is situated an Indian burial ground. This point may be considered as the south entrance point of Serpent Harbour.

Serpent Harbour.—This inlet, from Emerald Point, runs in a general easterly direction 2³/₄ miles, to the mouth of **Serpent River**, further than which the survey was not taken, but to which distance vessels drawing not more than 7 feet (2^m1) of water can proceed. The inlet has an average breadth of half a mile. The ruins of a former mill and wharves are on the northern shore
30 of the inlet, about 6 cables inside Narrow Point of Nobles Island. (See insert on Chart No. 2287). At one-third of a mile above the former mill site, the depth of the harbour diminishes to less than 18 feet (5^m5) and at 1¹/₄ miles from the same there is not more than 12 feet (3^m7).

The village of **Spragge**, with a population of about 200, is situated on the
40 north shore of the harbour opposite Nobles Island. It is a station on the Canadian Pacific Railway. A summer home, with water tank, is conspicuous.

Customs.—There is no customs official here but one resides in Blind River.

Nobles Island, rising to a height of 140 feet (42^m7), and three-quarters of a mile long, lies across the mouth of the harbour, leaving a good channel north of it,
45 by which 18 feet (5^m5) of water can be carried to the western wharf.

Narrow Point is the long, sharp northwest point of Nobles Island, and a vessel entering the harbour may keep the point close on board, there being 4 fathoms (7^m3) of water, 50 feet (15^m2) off it.

Chart 2287.

Meteor Rock, 15 feet (4^m6) in height, is a small, round rock lying a quarter of a mile southwesterly from Narrow Point of Nobles Island, and is a good mark of recognition for the entrance to Serpent Harbour. Prior to the survey, masters of vessels had been in the habit of passing north of Meteor Rock, by which passage they could carry only 13 feet (4^m0) of water (in low stages there may be 6 feet (1^m8) less), the greatest depth on the bank connecting the rock with **Hospital Point**. 5

The southeast extremity of the shoalest part of this mud bank extends 170 yards (155^m5) from the eastern part of Hospital Point, and is distant 350 yards (320^m0) northeast from Meteor Rock, where there is only 4½ feet (1^m3) of water. The deeper channel, however, is southward of Meteor Rock and between it and Cross Island. 10

Cross Island lies athwart the channel into the harbour, the water being just as good between it and Nobles Island as between it and Meteor Rock, the more direct passage, and therefore the one recommended. This island, 31 feet (9^m4) high, and small, leaves a channel with 23 feet (7^m0) of water, 125 yards (114^m3) in width, between it and Meteor Rock bank, and also a passage with the same depth 100 yards (91^m4) broad between its eastern end and Nobles Island; but the latter has a sharp turn, awkward for a long vessel. The east and south sides of Cross Island are steep-to, while from the west extremity it is shallow for 50 feet (15^m2), and on the north side shoal water extends 50 yards (45^m 7). 20

Morrison Islands, two in number, lie at the east extremity of Nobles Island, with a boat channel between, the eastern one being steep-to.

Indian Island, is small, 13 feet (4^m0) in height, and lies in the middle of the bight on the north side of Nobles Island. 25

Anchorage, in 15 to 16 feet (4^m6 to 4^m9) over mud, may be had between Indian Island and the eastern shore of the bight.

Smith Island, 38 feet (11^m6) high, lies a quarter of a mile southeast from Morrison Islands, and is separated from the south shore of the harbour by a boat channel 40 yards (36^m6) wide; a vessel will find anchorage in 20 feet (6^m1) over mud, between this and Nobles Island. 30

The entrance to Serpent Harbour, south of Nobles Island, is situated a little less than two-thirds of a mile eastward of Emerald Point. Here the channel is narrowed by a reef 3 feet (0^m3) high, lying close to the main shore, to a width of 100 yards (91^m4), in the middle of which lies a rock, with not less than 11 feet (3^m7) of water on it. A vessel drawing not more than 10 feet (3^m0) could safely pass through. 35

Eastward of Emerald Point, the coastline is cliffy, rising to a height of 138 feet (42^m1), and just east of the rocks, at the narrows, is a cove 200 yards (182^m9) long with rushes at the bottom; the coast then becomes cliffy again and 134 feet (40^m8) high till 250 yards (228^m6) eastward of the eastern entrance to the channel between which position and Smith Island the shore is composed of two shallow bays. 40

Snider Island, 60 feet (18^m3) in height, is a conspicuous, conical island 300 yards (274^m3) northeastward of Smith Island, and eastward three-quarters of a mile from the former mill site. It is connected by shallow sunken rocks to a smaller islet 15 feet (4^m6) high, 60 yards (54^m9) east of it, and a boat passage exists between both islands and the south shore. 45

Chart 2287.

McCracken Island, small and 19 feet (5^m8) high, lies 200 yards (182^m9) northeast from Snider Island and about midway between the two main shores. Between the east end of the latter and the middle of McCracken Island, and
 5 rather nearer to the former, lies a rock, with 5 feet (1^m5) of water over it. The ship's passage is between the rock and McCracken Island, and the rock may be avoided by keeping a point 2 miles westward of the entrance to the harbour (recognizable by its high pines) open north of, or touching Narrow Point of Nobles Island.

10 **Spragge Island**, 100 yards (91^m4) from the south shore, is 30 feet (9^m1) high and lies a quarter of a mile southeast of Snider Island. There is a depth of 14 feet (4^m3) abreast of this island.

The coast between it and the mouth of the river is broken up into several coves.

15 **Hamilton Rock** (*Lat.* 46° 12' N., *Long.* 82° 38' W.), with 5 feet (1^m5) of water on it, lying in the middle of the inlet, is situated nearly half a mile eastward from McCracken Island.

From the mouth of Serpent River, the north shore of the harbour trends first in a northwesterly direction a quarter of a mile, whence it runs with a succession
 20 of slight bights and points to the old mill site and ruins of the wharves situated half a mile northeast from Narrow Point. At the western end of these, there is a depth of 17 feet (5^m2).

Fournier Islands, two in number, the western one being 82 feet (25^m0) and the other 48 feet (14^m6) high, lie westward a little over one-third of a mile
 25 from Meteor Rock, and their south sides are steep-to.

Strong Island, lying 350 yards (320^m0) off the main shore and the same distance westward of Fournier Islands, is about 50 feet (15^m2) high, with a rock detached from the west extremity, and, like the last mentioned, has deep water close to its south side. A passage with 17 feet (5^m2) exists between these islands
 30 and the shore by keeping nearer the former.

Chicora Island lies over 2 miles westward of Strong Island, and quite near the coast, about 100 feet high (30^m5), which, between Strong and Chicora Islands, may be approached to 200 yards (182^m9).

Mitchell Island, lying parallel to the shore, a third of a mile in length
 35 and narrow, is situated with its western point 1½ miles westward from Chicora Island. The passage between Mitchell Island and the shore, a quarter of a mile broad, has a depth of 14 to 17 feet (4^m3 to 5^m2) over mud, and would offer shelter to vessels. Rocks, with 3 feet (0^m9) over them, lie eastward a little over a quarter of a mile from the east extremity of Mitchell Island and 300 yards (274^m3)
 40 offshore.

Shickluna Rock, with 6 feet (1^m8) of water over it, lies 300 yards (274^m3) southward from the western end of the island.

Magazine Island, small and bare, with some large blocks of stone on the top, and about 20 feet (6^m1) high, lies half a mile southward of Mitchell Island
 45 and 1½ miles eastward from the wharf at Algoma Mills. A rock, 6 feet (1^m8) high, lies 170 yards (155^m5) northeastward from Magazine Island, good water existing all round this island and rock.

In the passage between Mitchell and Magazine Islands, the depths vary from 18 feet (5^m5) near the former to 30 feet (9^m1) on the latter side, and in using
 50 this channel care must be taken to avoid Shickluna Rock by keeping nearer Magazine Island:

Chart 2287.

Round Island is situated a little more than three-quarters of a mile northward from Bassett Island, and the same distance southeast from Magazine Island. It is about 150 feet (45^m7) high, thinly wooded, cliffy on the west side, and of about the same size and appearance as Scott Island (*see* page 000). A rock, with 5 feet (1^m5) of water on it, lies 200 yards (182^m9) eastward of the southeast extremity, and a rock 24 feet (7^m3) high lies 60 yards (54^m9) off the southwest side. 5

McCallum Islands consist of a group of low islands and rocks, the western and longest of which, 200 yards (182^m9) long east and west and 70 yards (64^m0) broad, lies three-quarters of a mile northwest from the east end of Bassett Island. A rock, with less than 6 feet (1^m8) of water over it, together with a patch of 12 feet (3^m7) lying 150 yards (137^m2) still further east, narrow the channel between McCallum Islands and the rock 24 feet (7^m3) high, near Round Island, above mentioned, to 300 yards (274^m3), in which, however, there is a depth of 4 to 5 fathoms (7^m3 to 9^m1) by keeping rather nearer to this rock. A rock, awash, lies 70 yards (64^m0) from the southwest extremity of the west McCallum Island. A good channel, with 5 fathoms (9^m1) water and two-thirds of a mile in breadth, will be found between McCallum and Bassett Islands. 10 15

Beacon.—A white beacon with a red top stands on the southwestern tip of the largest of the McCallum Islands. 20

East Bay is an indentation close eastward of Algoma Mills, in which a vessel will find shelter in westerly gales, in 14 to 15 feet (4^m3 to 4^m6) (in low stages there may be 6 feet (1^m8) less), over sand and mud.

Algoma Mills, in the township of Long, is a station on the Sault Ste. Marie branch of the Canadian Pacific Railway. A mill was formerly operated here by this company, who also used this place as a coal depot. A stream emptying out of Lake Lauzon, flows into the bay which is separated by a level broad point from East Bay. From offshore, there is little indication of the settlement here. 25 30

Lally Point, nearly 1½ miles southwestward of Algoma Mills, partially shelters the bay at the latter, notwithstanding which, in heavy westerly breezes, considerable swell rolls in.

Sanford Island, wooded and about 30 feet (9^m1) high, is situated a little over three-quarters of a mile southward of Lally Point; the island is half a mile long northeast and southwest by a quarter of a mile in breadth, and is connected to Lally Point by a bar of sand, on which the deepest water, 18 feet (5^m5), is 150 yards (137^m2) from Sanford Island. At a third of the distance from Sanford Island to Lally Island, there is 16 feet (4^m9) and in the middle of the passage only 15 feet (4^m6) of water (in low stages there may be 6 feet (1^m8) less). 35 40

Ploughboy Rock, with 9 feet (2^m7) of water on it, lies two-thirds of a mile eastward from the northeast extreme of Sanford Island. A depth of 14 feet (4^m3) will be found on the sandbank connecting Ploughboy Rock to Sanford Island.

Buoy.—Ploughboy Rock is marked by a red spar buoy.

Spartan Rock, with 15 feet (4^m6) of water on it, lies 077°, distant 1½ miles, from the northeast point of Sanford Island, and 150°, a little more than a mile, from Algoma Mills wharf. 45

Buoy.—Spartan Rock is marked by a red spar buoy.

Chart 2287.

O'Dwyer Island, small and low, lies a quarter of a mile westward of the southwest extreme of Sanford Island, the channel between them being rendered unfit for large vessels by reason of a rock in the middle, with 9 feet (2^m7) of water on it. A passage exists on the north and south sides of O'Dwyer and Sanford Islands, the former being known as North and the other as South Passage.

Pandora Rock, with 8 feet (2^m4) on it, is situated a little over one-third of a mile westward from O'Dwyer Island, and to ensure passing north of it keep the north sides of Round and Sanford Islands touching, and bearing 079°.

Isaac Rock, with 12 feet (3^m7) over it, lies southwestward, two-thirds of a mile from O'Dwyer Island.

May Reef, with the same depth on it, lies in the same direction, 1½ miles from the same.

A rock, with boulders on top and having a least depth of 6 feet (1^m8) of water, lies 300 yards (274^m3) east of May Reef or 239°, 1⅓ miles from the southwest point of Sanford Island.

Simon Rock (*Lat. 46° 09' N., Long. 82° 52' W.*), small, bare and 1½ feet (0^m5) high, is the westernmost of the rocks and islands forming the large group south of Algoma Mills, and lies 233°, distant 1¾ miles, from Sanford Island. Shoal water extends 70 yards (64^m0) from the south end of the rock, with which exception nothing of a very shallow character could be found in its locality. A sandy knoll, with 17 feet (5^m2) over it, lies eastward nearly half a mile from Simon Rock.

Southwest Patches, having a least depth of 6 feet (1^m8) on them, lies southward half a mile, and one-third of a mile, respectively, from Simon Rock.

Buoy.—A red spar buoy is moored northeastward of the 6-foot (1^m8) patch.

Directions.—Whalesback Channel.—Bound from **Little Detroit** to **Algoma Mills** follow the directions for Whalesback Channel (*see* page 325) as far as Bassett Island. Pass 150 yards (137^m2) northward of the latter, and 200 yards (182^m9) south of McCallum Islands, marked by a beacon. Passing which, keep sufficiently eastward, if of heavy draught, to pass northward of Spartan Rock, which has a red spar buoy moored on its southern side. Thence proceed into the bay.

If for **Serpent Harbour**, follow the directions for Whalesback Channel, and when well westward of La France Rock (*see* page 319), haul northward until abreast of Navy Island, giving a wide berth westward to Prendergast and Drew Islands, whence proceed midway between the islands on each side. Pass 50 yards (45^m7) south of Meteor Rock, the same distance west of Cross Island, north of Narrow Point, and midway between the ruins of the wharves and Nobles Island until up to the former, or a vessel may anchor 200 yards (182^m9) northeast of Indian Island. The least water passed through will be 18 feet (5^m5), but there may be 6 feet (1^m8) less at low stages.

From Boyd Island old lighthouse westward.—If bound to Mississagi Strait, a vessel on the leading mark to McBean Channel (*see* page 312), and distant 1¼ miles southward of the lighthouse, should steer 265°, for 7¾ (6¾ nautical) miles, to a position one mile south from Dalrymple Island (*see* page 313). Thence, to a position a quarter of a mile northwest of the western part of Meldrum Point, the course is 254°, and distance 34 (29½ nautical) miles.

Chart 2287.

If bound to **St. Joseph Channel** and **Sault Ste. Marie**, a stranger should pass south of The Cousins (*see* page 327); the course from the above position south of Dalrymple Island to one mile south from the southeast Cousin being 261°, and distance $14\frac{3}{4}$ ($12\frac{3}{4}$ nautical) miles. 5

Scott Passage.—If taking Scott Passage from the south, Rescue Rock, awash, is an awkward obstruction; before getting nearer than 2 miles to Scott Island, care should be taken that the west side of Round Island is not in sight southwest of Scott Island, as the southwest extremes of both islands in line, bearing 326°, lead close northeastward of the rock. Pass between Scott and Mills Islands, northeast of Peter Islands and Robb Rocks, and southwest of Sylvain Island, and thence as directed above. 10

Turnbull Passage.—In taking this passage from the south, approach with the west side of Round Island, touching the east side of Turnbull Island, bearing 344°. This mark, if distinguishable at this distance, leads $1\frac{1}{4}$ miles westward of Rescue Rock, and a third of a mile on the same side of Gunboat Shoal. Keep half a mile east of Turnbull Island, whence proceed as directed above. 15

South Passage.—If proceeding to Serpent Harbour or Algoma Mills by this passage, before shoaling to less than 10 fathoms (18^m3), bring the red spar buoy marking Southwest Patches in line with the northwest side of Sanford Island. Steer to pass to eastward of the buoy, passing rather nearer Doucet than Simon Rock, until the south side of Round Island is in line with the north side of McCallum Islands (the low rocks of the latter will overlap the coast of the former, bearing 071°. Keep on this course, pass 200 yards (182^m9) north of these islands and, thence, in mid-channel for Serpent Harbour. 20 25

If for Algoma Mills, as soon as the western end of Clara Island is abeam to starboard, alter course northward and steer to pass between the red spar buoys marking the Ploughboy and Spartan Rocks.

North Passage.—Before Comb Point (Blind River) bears west of north, the north sides of Round and Sanford Islands should be brought in line, bearing 079°, which range will keep a vessel off the extensive sand flats fronting the shore from Comb to Lally Point. This mark will also lead to the north side of Sanford Island in 17 feet (5^m2) of water (in low stages there may be 6 feet (1^m8) less). 30

Pass 200 yards (182^m9) north of the latter, and head for Magazine Island, passing 300 yards (274^m3) north of Ploughboy and a quarter of a mile on the same side of Spartan Rock. Leave Magazine Island 200 yards (182^m9) on either hand, and steer so as to pass that distance south of Strong and Fournier Islands, whence, enter Serpent Harbour as directed (*see* page 332). 35

Coast.—Double Island, as its name indicates, consists, of two small low islets, the western of which is almost bare and 12 feet (3^m7) high; they lie $1\frac{1}{2}$ miles westward from Lally Point, and two-thirds of a mile off the shore of the bight between the latter and Mary Point. In the eastern portion of the bight are three islets, the western being known as **Dot**, the eastern as **Plumb**, and the northern as **Can Island**. Between the former and Double Island the extensive sandy flat has a depth over it of 10 feet (3^m0). 40 45

Mary Point is situated nearly $2\frac{1}{2}$ miles west from Lally Point and terminates the bight above mentioned.

Moodie Rock, 6 feet (1^m8) high at low stages, with a second rock just showing above water at the same stage, 100 feet (30^m5) eastward of it, lies 300 yards (274^m3) from Mary Point. 50

Chart 2287.

Caribou Point is a small, hooked peninsula situated southeastward a little over three-quarters of a mile from Blind River, and westward $2\frac{2}{3}$ miles from Mary Point.

5 **Louis Island**, 3 feet (0^m3) high, with a few trees on it, and the eastern one of a small group of rocks, lies 350 yards (320^m0) southeastward from Caribou Point; the western rock is 6 feet (1^m8) high, and lies 150 yards (137^m2) southward of the point.

10 **Davies Rock**, 5 feet (1^m5) high, lies eastward two-thirds of a mile from Caribou Point, and 300 yards (274^m3) off the shore of **Hoffman Bight**, as the indentation between **Colin Cove** and Caribou Point is called.

Dixie Rock, awash, lies nearly half a mile southeast from the same. A rock, awash, is situated 70 yards (64^m0) northwestward of Dixie Rock.

15 **Henriette Island** (*Lat.* $46^\circ 11' N.$, *Long.* $82^\circ 57' W.$) is situated halfway between Caribou Point and the wharf at Blind River. It is low and close to shore.

20 **Blind River**, with 2,512 inhabitants in 1951, is situated on the Sault Ste. Marie branch of the Canadian Pacific Railway, 7 miles westward of Algoma Mills, at the mouth of the Blind River. A large sawmill of J. J. McFadden, Ltd., is located on the waterfront west of the town. The large white chimney and refuse burner at the mill are distinguishable far out on the lake. A large black iron water tank is situated on a high hill just eastward of the town.

A steamer maintains a daily service between Blind River, Gore Bay and Meldrum Bay, Manitoulin Island, during the season of navigation.

25 **Wharves.**—Two parallel pile trestle loading piers, with elevated tramways and lumber storage areas, extend outwards about 1,500 feet (457^m2) from the J. J. McFadden, Ltd. mill. Loading berths, with a depth of $18\frac{1}{2}$ feet (5^m6) are located east and west of the piers. The slip between the piers is 72 feet (21^m9) wide and a berth 915 feet (278^m9) long is reported dredged to a depth of $20\frac{1}{2}$ feet (6^m2). The entrance channel extends to the outer end of these piers.

30 The Government wharf, located at Harriette Point, is about 350 yards (320^m0) northeastward of the outer end of the company's wharves; it is 448 feet (136^m6) long with an ell end 198 feet (60^m4) in length and along the face is a depth of $18\frac{1}{2}$ feet (5^m6).

35 The parallel piers of the old White Pine Lumber Company are situated about 300 yards (274^m3) east of the Government wharf at the mouth of Blind River. The slip between these two piers, which are now in a dilapidated condition, with the exception of 300 feet (91^m4) of the west pier, that had been rebuilt, forms a splendid shelter for small craft.

Customs.—Blind River is an outpost of entry.

40 **Channels.**—**Buoys.**—The approach to the wharves is by a dredged channel in two sections, 150 feet (45^m7) wide and 18 feet (5^m5) deep. The outer section runs northeastward from deep water in the lake to its intersection with the inner section, which runs north in line with the western long lumber wharf. The channel passes 80 yards (73^m2) east of the eastern end of the glance boom at Comb Point. While proceeding in the channel a vessel should slow down, just
45 keeping steerage way. From the main channel another dredged channel $18\frac{1}{2}$ feet (5^m6) deep branches off leading to the Government wharf. A turning basin in front of this wharf, 500 feet (152^m4) long and 300 feet (91^m4) wide has been dredged to the same depth. A red light-buoy, showing a *flashing red* light, is
50 moored on the southern side of the channel at the entrance; red spar and black spar buoys mark the channels from there to the wharves.

Chart 2287.

Light.—Leading Lights.—A *flashing white* light is exhibited, at an elevation of 14 feet (4^m3), from a steel structure with black and white daymarks, from the western of the two parallel piers at the mouth of Blind River. It indicates the entrance to the boat shelter. 5

Two *fixed red* leading lights lead to the lumber wharves. The front light, at an elevation of 30 feet (9^m1), is exhibited from a mast with white diamond-shaped daymarks and black, vertical stripe, on the shore at the inner end of the western lumber wharf; the rear light is exhibited, at an elevation of 40 feet (12^m2), from a similar structure, 003° , 280 feet (85^m3) from the front light. These lights 10 lead through the inner section of the channel to the lumber wharves.

Two *fixed red* leading lights lead to the Government wharf at Blind River. The front light is exhibited, at an elevation of 15 feet (4^m6), from the southeast corner of a wooden storehouse on the outer end of the Government wharf; the rear light is exhibited, at an elevation of 40 feet (12^m2), from a mast with white 15 daymark, 025° , 2000 feet (609^m6) from the front light. These lights mark the axis of the channel, from the intersection of their alignment with that of the lumber wharves range, to the Government wharf.

Susanne Island, a small, bare island, 8 feet (2^m4) high, lies half a mile eastward from Comb Point. A rock, awash, lies 150 yards (137^m2) eastward 20 from the island, while sunken rocks lie off the west and northwest sides a distance of 100 yards (91^m4).

Clearing mark.—Mary Point in line with Louis Island, bearing 093° , leads north of these rocks.

Comb Point, the eastern extremity of the island separated from the main- 25 land by **Dorothy Inlet**, is situated nearly a mile southwest of the mouth of Blind River, and shelters the wharves from the west. A glance boom, about 200 feet (61^m0) long, is built on the rock ledge southeast of Comb Point. The easterly end of the crib is 240 feet (73^m2) west of the entrance channel.

Caution.—From the outer end, and at right angles to the eastern pier at the 30 White Pine slip at the mouth of the Blind River, ruins of the old pier extend to the eastward 400 feet (121^m9).

Belle Rock, with 8 feet (2^m4) over it, lies nearly half a mile south from Susanne Island, and to pass south of it keep the whole of Double Island shut in 35 north of Lally Point, the latter bearing 082° .

Buoy.—A black and white spar buoy marks Belle Rock, and is moored west of it.

Blind River Bank is the extensive flat, with depths from 12 to 18 feet (3^m7 to 5^m5) (in low stages there may be 6 feet (1^m8) less) which makes out in the vicinity of Blind River a distance of nearly $2\frac{1}{2}$ miles. 40

Patrick Point is situated 2 miles westward of Comb Point; and a little over one-third of a mile east of Patrick Point is the western entrance (with the remains of a little wharf) to **Dorothy Inlet**, between which and Comb Point three small coves indent the coast. Midway between the middle and eastern of these boat coves, and two-thirds of a mile west of Comb Point, a reef makes 45 out 150 yards (137^m2).

Chart 2287.

The bay, into which the **Mississagi River** empties itself, is contained between Patrick Point on the east and **Wolstan Point** one mile westward of it, the mouth of the river being nearer to and one-third of a mile northwest from
5 Patrick Point. The river trends northwesterly $1\frac{1}{2}$ miles, with a depth of over 8 feet (2^m4) when another channel leaves the main river and empties into Mississagi Bay, with a depth of 4 feet (1^m2) on the bar, the two mouths enclosing a delta of several low islands. The Canadian Pacific Railway crosses the river a quarter of a mile above the fork.

10 **Patrick Point Bank** commences at Wolstan Point, whence it makes out 300 yards (274^m3) and stretches across the bay into which the river flows, forming a bar, over which not more than 8 feet (2^m4) can be carried, into Mississagi River. The southeastern extremity of the bank, with a depth of 8 feet (2^m4), extends
15 over three-quarters of a mile southeastward from Patrick Point; a vessel should therefore give this point a wide berth.

Buoy.—A black spar buoy is moored on the southern edge of this bank.

Beaumont Point (Lat. $46^\circ 10' N.$, Long. $83^\circ 03' W.$) is the next west of Wolstan Point, being distant therefrom a little over half a mile, and between, the shore takes the form of a sandy beach.

20 **Webber Island**, the western extremity of the delta of Mississagi River, is about 20 feet (6^m1) high, and between it and Beaumont Point is a shallow sandy cove with a small islet in the middle. A small, wooded island lies 170 yards (155^m4) westward from the southwest point of Webber Island, being connected thereto by a narrow bank of dry stones.

25 **Mississagi Bay** takes its shape from a chain of islands extending from Webber Island, a little more than 5 miles, called the **French Islands**. This bay is so shallow that for 3 miles from the head (into which flow two mouths of Mississagi River), there is less than 3 fathoms (5^m5) of water, and for 2 miles, not more than 12 feet (3^m7) (in low stages there may be 6 feet (1^m8) less), the
30 bottom over the whole bay being sandy.

Hennepin Island, the largest and easternmost of the chain, is 2 miles long, with a greatest breadth of a third of a mile, and at three-quarters of a mile from the west end attains, in the shape of a dark, wooded summit, a height of 140 feet (42^m7). The south side of the island may be approached to 150 yards (137^m2),
35 and the bottom on the north side is level with the exception of Briggs Rock.

Briggs Rock, with 6 feet (1^m8) on it, is situated half a mile from the north-west extremity of Hennepin Island, and 280 yards (255^m9) offshore. Some idea may be formed of the small size and slight indication given by the soundings of the rocks on this north shore, when it is stated that the *Bayfield* had the mis-
40 fortune to get on this rock, though a boat was ahead sounding, and the leadsman was sounding in the ship, the latter steaming slowly.

Two rocks, $1\frac{1}{2}$ feet (0^m4) high lie north 370 yards (338^m3) and one-third of a mile, respectively, from the northeastern extremity of Hennepin Island.

Fisherman Gut, separating the latter from Webber Island, has a depth of
45 about 3 feet (0^m9) in from its southern end to the small harbour and fish wharf at the eastern end of Hennepin Island. Beyond the fish wharf into Mississagi Bay, there is not more than $1\frac{1}{2}$ feet (0^m5) of water.

Chart 2295.

Tonty Island, 40 feet (12^m2) high, narrow, and nearly three-quarters of a mile long east and west, is divided from the west end of Hennepin Island by a channel through from the south, to avoid the reef extending from the southwest extremity of Hennepin Island; afterwards hauling over for the northwest point of the latter, to clear the shoal which makes out from the northeast point of Tonty Island. The north and south shores of Tonty Island may be approached to 150 yards (137^m2), but from the west extreme a reef of dry and sunken rocks extends southwesterly 200 yards (182^m9). 5

De Caen Rock, 6 feet (1^m8) high, lies westward a little over one-third of a mile from the northwest extremity of Tonty Island; it is 150 yards (137^m2) long east and west, and may be approached to 100 yards (91^m4) all round, except to the southwestward, where at low stages of the lake, a second rock shows a short distance from De Caen Rock. 10

A depth of 17 feet (5^m2) of water will be found between it and Tonty Island, while on the other side northwest a little more than a third of a mile is situated a patch, with 14 feet (4^m3) over it. The water of Mississagi Bay eastward of De Caen Rock begins to shoal more rapidly. 15

La Salle Island, with a sharp rocky top near its east end, 54 feet (16^m5) high, is situated a little more than a mile westward of Tonty Island; it is a third of a mile long east and west with an average breadth of 150 yards (137^m2). The south side of the island is steep-to, whereas from the east and north sides a bank, under 3 fathoms (5^m5), extends half a mile, the shoalest place, with 12 feet (3^m7) over it, being situated a quarter of a mile northeast from the east end of La Salle Island. A depth of 18 feet (5^m5) may be carried through between the latter and De Caen Rock. A few fishermen are usually located on the extremity of La Salle Island in the summer. 20 25

Richelieu Island lies a quarter of a mile westward of La Salle Island, the gap between being nearly filled with dry rocks. This island is small.

Talon Rock, quite small and 3 feet (0^m9) high, is the western of the chain and bears 298° , distant $8\frac{1}{2}$ ($7\frac{1}{2}$ nautical) miles, from Mississagi Island lighthouse. A rock, with less than 6 feet (1^m8) of water on it, lies 150 yards (137^m2) northeast from this rock, while its east and west sides are foul for a distance of 50 yards (45^m7). 30

Steeple Rock, just covered (in 1933 this rock showed about 5 feet (1^m5) out of water), derives its name from its pinnacly nature and is a very dangerous obstruction, the soundings at 100 yards (91^m4) giving no indication of its existence. It bears 229° , and is distant a quarter of a mile from Talon Rock. This, together with Briggs Rock, already spoken of, standing as they do like haystacks upon a level prairie, will always make the existence of such rocks possible after the most carefully executed survey, and mariners cannot be too vigilant in keeping a good lookout for any sign of discoloured water when navigating on this northern coast. 35 40

De Roberval Point, which may be termed the north entrance point, is nearly 5 miles from the head of Mississagi Bay; it is a very ragged point, indented by numerous snug little sandy coves and strewn with rocks and islands. 45

From the western mouth of Mississagi River, the rushy north shore of the bay trends northwestward 3 miles, and thence southwesterly $1\frac{3}{4}$ miles to near Sayers Island.

Chart 2295.

Sayers Island, 9 feet (2^m7) high and small in size, is the easternmost of the group lying 200 yards (182^m9) off De Roberval Point; eastward of Sayers Island the water commences rapidly to shoal.

- 5 **Joliette Islands**, three in number, lie off the western part of this point, and form the south shore of a rocky bay known as Foul Bight. The western and smallest Joliette Island, 5 feet (1^m5) high, lies $1\frac{3}{4}$ miles north from Talon Rock. These islands should not be approached on the south side nearer than a quarter of a mile.
- 10 **Supply Point** is a very inconsiderable projection lying two-thirds of a mile northwest from the western Joliette Islands, but a small cove, on the west side of the point, afforded good landing for provisions sent in to the parties on the construction of the Canadian Pacific Railway, whence it derived its name.

- Foul Bight**, already alluded to, is the name given to the rocky and shallow indentation, contained between De Roberval and Supply Points. In the bight, or in the many coves about De Roberval Point, a boat will find safe shelter in westerly gales.

(For north shore westward of Supply Point, see Chapter XI, page 353.)

Chart 2287.

- 20 **Mississagi Island** (Lat. $46^\circ 07' N.$, Long. $83^\circ 01' W.$) is low with a slight rise and trees on the north end, and two-thirds of a mile long north and south, its breadth being irregular on account of two coves which indent the eastern side. The light near its south coast bears from that on Cape Robert (see page 348) 309° , distant $12 (10\frac{1}{2})$ nautical miles, and 246° , distant $8\frac{1}{2} (7\frac{1}{2})$ nautical miles from
- 25 O'Dwyer Island (see page 332).

Light.—A *flashing white* light is exhibited, at an elevation of 60 feet (18^m3), from a steel tower with a daymark attached, on the southern end of Mississagi Island. The light is observed between the bearings of 144° through south to 228° .

- 30 A patch, with 12 feet (3^m7) over it, lies 250 yards (228^m6) southeast from the lighthouse.

- Dog Point Shoal** is the name given to a reef stretching northward from the point of that name a quarter of a mile, at which distance there is only 6 feet (1^m8). The cove on the east side, in which is situated the wharf and boathouse
- 35 belonging to the light, is fit only for boats, but provides excellent shelter in westerly gales.

North Point Shoal extends from North Point as a narrow gravel bank, with less than 6 feet (1^m8) of water upon it, a quarter of a mile northward.

- Anchorage.**—Vessels will find good temporary shelter from westerly gales
- 40 under the east side of Mississagi Island in 4 to 5 fathoms (7^m3 to 9^m1), clay bottom.

- West Islet**, about 4 feet (1^m2) high and 70 yards (64^m0) in diameter with an indentation on its north side, is situated two-thirds of a mile southwest from North Point of Mississagi Island, being connected thereto by a bank, over
- 45 which 12 feet (3^m7) may be carried in an emergency, by keeping the old and eastern burner at Blind River touching the trees on the north end of Mississagi Island bearing about 027° , until 150 yards (137^m2) from the latter, when haul

Chart 2287.

sharply to the northwest and keep the light right astern; but as shoal rocks make out 200 yards (182^m9) from the east end of West Islet, and it is difficult to avoid a depth of 9 feet (2^m7) (in low stages there may be 6 feet (1^m8) less), in the middle of the passage, it is fit only for small craft. A reef of dry and sunken rocks extends southwestward 300 yards (274^m3) from the south point of West Islet. 5

McDonald Shoal, with 5 feet (1^m5) over it, is a rocky patch lying a quarter of a mile northwest from West Islet, with a depth of 3 to 4 fathoms (5^m5 to 7^m3) between them.

Northwest Reef, with 13 feet (4^m0) over it, and in low stages there may be 6 feet (1^m8) less, is an important danger, bearing 299°, distant nearly 3 miles, from Mississagi Island lighthouse, and from the reef the southwest extremity of Mississagi Island is in line with the contrary side of West Islet. 10

Caution.—Passing southward of Mississagi Island in thick weather, a vessel should not shoal to less than 10 fathoms (18^m3). 15

Campana Shoal, with 17 feet (5^m2) on it, is the rocky head of a bank, a mile in greatest diameter under the depth of 10 fathoms (18^m3), and is a dangerous shoal for a heavy draught vessel. It bears 098°, distant 5 miles, from Mississagi Island lighthouse, and 282°, 4½ miles from the northwestern Cousin. 20

Buoy.—A red and black spar buoy marks Campana Shoal.

Innes Island, 4 miles northwestward from Clapperton Island, is 2½ miles long in a northeast and southwest direction with an average width of two-thirds of a mile, and about 30 feet (9^m1) high.

Royal Point, the north extremity of this island, bears 287° and is distant 5 miles from Clapperton Island lighthouse; it is flat off this point for 200 yards, (182^m9), where there is a depth of 15 feet (4^m6). 25

Hesson Point is the next eastward of Royal Point, being distant therefrom half a mile southeasterly; the water is deep close to this point. The east side of Innes Island now trends southward nearly 1¼ miles to **Landerkin Island** which is the largest of a group of small, low islands, between which and Innes Island there is scarcely a passage for a boat. 30

A rock, with 4 feet (1^m2) of water over it, lies a quarter of a mile southeast from the eastern extremity of Landerkin Island, in addition to which not more than 12 feet (3^m7) of water will be found at a radius of the same distance from the same extremity 35

Anchorage.—There is excellent anchorage between Hesson Point and Landerkin Island, in 5 to 6 fathoms (9^m1 to 11^m0) over clay, where vessels will get good shelter in westerly gales by swinging no nearer the island than to keep Boyd Island old lighthouse in sight, bearing 354°. 40

Gavazzi Island, the eastern of two small low islets, is situated a little over half a mile southwest of Landerkin Island, and should receive a berth of 300 yards (274^m3). This island lies half a mile from Innes Island shore.

Kenny Point is the southwestern extremity of Innes Island, and from it a shoal reef named after the point, extends in a southwest direction one third of a mile, where there is only 8 feet (2^m4) of water. To lead a quarter of a mile westward of this reef, keep Mount Victoria westward of, or touching the north-east side of Darch Island, bearing 348°. 45

Chart 2287.

From Kenny Point, the south coast of Innes Island trends three-quarters of a mile in an easterly direction, is indented by several shallow coves, and should not be approached nearer than a third of a mile.

- 5 **Light-buoy.**—A red light-buoy, showing a *flashing red* light, is moored on the edge of the 5-fathom (4^m1) contour southward of Innes Island.

Trow Point, on the west side of the island, is rather nearer to Royal than to Kenny Point, having on each side of it a shallow, stony cove.

- 10 **Trow Point Shoal** is a large rocky bank extending from the above point, there being but 11 feet (3^m7) at the distance of two-thirds of a mile, in addition to which a rock, with 5 feet (1^m5) on it, bearing 294° , is distant a little over one-third of a mile from the same point.

Clearing mark.—To avoid this shoal keep the east end of Mount McBean open northwest of, or in line with Royal Point, bearing 059° .

- 15 **Darch Island** is $2\frac{1}{3}$ miles long northeast and southwest, $1\frac{1}{2}$ miles wide, and at its northern end about 50 feet (15^m2) high.

North Point of Darch Island bears 289° , and is distant a little over $2\frac{3}{4}$ miles, from Royal Point, and the water is deep close to it.

- 20 **Deep Point**, on the east side of the island and $1\frac{1}{4}$ miles southward from North Point, has the same character as well as the coast between them.

Stisted Island is a small, stony islet 150 yards (137^m2) from the southeast extremity of Darch Island, and one mile southwest from Deep Point. It should receive a berth of a quarter of a mile.

- 25 **Charlton Shoal**, with 8 feet (2^m4) of water over it, lies nearly one mile southwestward from Stisted Island, and the same distance eastward from the southern and smaller Howland Rock.

Clearing mark.—To pass southeastward of this shoal, keep the east end of Mount McBean touching or over Royal Point, bearing 059° .

- 30 **Robitaille Point**, the western extremity of Darch Island, is situated $1\frac{2}{3}$ miles northwestward from Stisted Island, the coast between being foul to the distance of half a mile.

- 35 **Pinchgut Point** (Lat. $46^\circ 05' N.$, Long. $81^\circ 25' W.$), on the northwest side of Darch Island, is nearly a mile northeast from Robitaille Point, and, like the whole of the northwest side of Darch Island, is steep-to. Good limestone is quarried from the cliff near the shore in the vicinity of this point.

Crawford Island, a third of a mile in length and 5 feet (1^m5) high, is a wooded island over a third of a mile southward of Robitaille Point, and the passage between is fit only for boats or small craft.

- 40 A bank, with 8 feet (2^m4) on it, lies a quarter of a mile from the northwest coast of Crawford Island. A low island, 100 yards (91^m4) in diameter, lies 200 yards (182^m9) south of the island, from which a reef, with 3 feet (0^m9) of water over it, extends in a southwesterly direction a little over a third of a mile.

Chart 2287.

Howland Rocks consist of two patches of gravel, with less than 6 feet (1^m8) of water over them, situated two-thirds of a mile southward of the last mentioned low island; shallow water extends 300 yards (274^m3) east and a quarter of a mile southwestward of Howland Rocks. 5

St. Just Islands, 3 feet (0^m9) high, consist of two small islets joined by stones, situated nearly 1½ miles southwest from Robitaille Point of Darch Island.

Belleau Island, 5 feet (1^m5) high and wooded, is over a third of a mile long in an east and west direction, by a quarter of a mile in width, being nearly divided in three parts by as many coves. Shoal water extends in a northerly direction 300 yards (274^m3) from the east narrow point of the island, while a flat of 12 feet (3^m7) makes out in the same direction, and a similar distance, from the northwest extremity of Belleau Island. From its southwest part, a bank extends over a quarter of a mile in a southerly direction, at which distance there is a depth of only 3 feet (0^m9). 10 15

Egg Island, 12 feet (3^m7) high, with a clump of elm timber in the middle of it in 1914, is the westernmost and smallest island of the group, and is connected to Belleau Island by a narrow rocky bank on which there is a depth of 8 feet (2^m4). A shoal extends a quarter of a mile in a southeasterly direction from its south end, but the north extremity may be approached to half that distance. From Egg Island, a chain of rocky banks extends in a general direction of 282°, for nearly 3 miles, and between which it is not advisable for strangers to attempt to pass. The principal dangers of this group with their positions relative to Egg Island will now be mentioned:— 20

Kaulbach Rock, with 14 feet (4^m3) on it, southward a little over half a mile. The bank on which it lies is half a mile long east and west and is narrow. 25

Wallace Rock, with its southeastern end, on which there is 9 feet (2^m7), lies southwestward three-quarters of a mile.

Labelle Reef, is a large patch, half a mile long and on which there is but 4 feet (1^m2) of water west a little over a mile. 30

Dalton Reef, with one foot (0^m3) of water on it (in low stages it will be 5 feet (1^m5) above), on nearly the same bearing distance 2·2 miles. Labelle and Dalton Reefs are separated by a narrow channel.

Tyrwhitt Shoal, with a depth of 14 feet (4^m3) on it, 282°, nearly 3 miles. Between this and Dalton Reef there exists another bank called **Denison Rock** with 14 feet (4^m3) on it. 35

Rob Roy Patch, with 21 feet (6^m4) on it, 275°, 3 miles.

Restless Bank, with least water of 26 feet (7^m9), is 1½ miles long by two-thirds of a mile wide under a depth of 10 fathoms (18^m3). The shoalest part, being 269°, distant 5½ miles, from Egg Island is separated from Rob Roy Patch by a depth of 12 fathoms (21^m9). 40

Clearing mark.—Mount Victoria, in line with Mouse Island, bearing 027°, leads westward of all the dangerous shoals above mentioned, and between them and Restless Bank.

Caution.—In thick weather, a vessel will get good indication of her approach to the south side of these reefs by the 10-fathom (18^m3) line, which keeps from these dangers an average distance of half a mile, excepting abreast of Wallace and Howland Rocks, where it approaches to within a quarter of 45

Chart 2287.

a mile. But the north sides of these reefs go down like a wall into little less than the deepest water between them and Aird Island; the soundings on that side are, therefore, no guide.

- 5 **Directions.**—A good channel, with a depth of 5 fathoms (9^m1), exists between St. Just and Belleau Islands, to take which from the southwest, bring Pinchgut Point midway between St. Just and Belleau Islands, bearing 044° , and proceed so through the channel until the west fall of Janet Head (between Gore and Julia Bays) touches the west extremity of St. Just Islands, bearing
10 198° ; when haul northward on this clearing mark to pass westward of the bank from Crawford Island.

- If taking this channel from the northeast, bring the west fall of Janet Head midway between St. Just and Belleau Islands, bearing 196° . When south of the islands and bound westward, keep Pinchgut Point midway between St. Just
15 and Belleau Islands, bearing 044° , astern, until the depth of 10 fathoms (18^m3) reached. If bound eastward, keep the east extremities of Dalrymple and Belleau Islands touching, and bearing 333° , until the same depth is reached.

THE NORTH COAST OF MANITOULIN ISLAND (*Cont'd from page 292*)

- Coast.**—From Burgess Reef (*see* page 291) the coast of Manitoulin Island
20 trends in a general westerly direction $1\frac{1}{4}$ miles to **Jessie Point**, to, and off which, shoal water extends nearly a quarter of a mile.

- East Bluff** is the name given to a steep bank 254 feet (77^m4) high over the eastern entrance point to Gore Bay and $4\frac{1}{2}$ miles southwest from Jessie Point, the coast, between them, a quarter of a mile back, rising to a height of about
25 200 feet (61^m0) and approachable to 200 yards (182^m9). The above bank, being denuded of trees for nearly three-quarters of a mile, is an unmistakable mark of recognition for Gore Bay, especially in the afternoon.

- Gorrel Point** is a slight projection of the coast at the southwest end of East Bluff, and the shore, for one mile northeastward of this point, is fringed
30 by a bank, with less than 6 feet (1^m8) of water, extending off 250 yards (228^m6), and on which in westerly gales, the sea breaks with great violence.

- Gore Bay** is $2\frac{1}{4}$ miles long north and south and $1\frac{1}{2}$ miles wide at the entrance, gradually narrowing to the head and affords good anchorage in from 4 to 10 fathoms (7^m3 to 18^m3) over mud, the latter depth being found half a mile outside,
35 and the former a quarter of a mile inside Town Point. The harbour is small, but well sheltered from all weather, so is much used as a harbour of refuge.

- The town of Gore Bay had a population of 752 in 1951. This is a regular port of call for steamers navigating the North Channel of Lake Huron. There is a daily mail service with the port of Cutler, 30 miles distant on the Sault Ste.
40 Marie branch of the Canadian Pacific Railway, and Little Current.

Town Point (*Lat.* $45^\circ 55' N.$, *Long.* $82^\circ 28' W.$), off which a spit with 9 feet (2^m7) of water on it, extends 150 yards (137^m2), is on the western side of the bay, near the northern end of the town.

- Light.**—**Leading lights.**—A *fixed red* light is exhibited, at an elevation
45 of 21 feet (6^m4), from a lantern on a pole on Town Point.

Two *fixed red* leading lights are exhibited at the head of Gore Bay. The front light is exhibited, at an elevation of 26 feet (7^m9), from a triangular tower with white daymark, the rear light is exhibited, at an elevation of 40 feet (12^m2), from a similar structure, 115 feet (35^m1), 188° from the front light.

Chart 2287.

Buoys.—A red spar buoy is moored in 18 feet (5^m5) of water, off Town Point. A black spar buoy is moored in 18 feet (5^m5) of water, near the head of the bay, to mark the beginning of shoal water for vessels coming in on the line of the leading lights.

5

Wharves.—The Government wharf, at the northern end of the town, is sheltered by Town Point. Irregular in shape, it has a total frontage of 538 feet (164^m0). At its southern end, a berth 128 feet (39^m0) in length, has a depth of 16 feet (4^m9); there is a similar depth in the berth 120 feet (36^m6) long, in front of the freight shed. Northward of the latter the depth decreases to about 8 feet (2^m4). The ruins of an old pier extend from shore about 200 yards (182^m9) south of the Government wharf.

10

A marine railway at Gore Bay will handle a craft 100 feet (91^m4) long, with a 20-foot (6^m1) beam and tonnage of 100.

Customs.—Gore Bay is an outpost of entry.

15

Kagawong Lake.—Inland, about 6½ miles southeastward from Gore Bay, is Kagawong Lake, second largest in Manitoulin Island, and noted for its fishing grounds. Easy access is had by road to **Lake Wolsey**, Bayfield Sound, **Ice Lake**, **Silver Lakes**, and others.

From Town Point, the western shore of Gore Bay runs northwestward for 2 miles to **Janet Head**, the western entrance point of Gore Bay.

20

Light.—**Fog signal.**—A *fixed white* light is exhibited, at an elevation of 43 feet (13^m1), from a white, square building with red lantern on Janet Head.

A hand fog-horn replies to vessels' signals.

Clapperton Island lighthouse to Gore Bay.—The course from a position half a mile northwest from the lighthouse, to a position 1½ miles, 036°, from Janet Head lighthouse, is 327°, and distant 12½ (11 nautical) miles. As this course leads a little less than half a mile northwest of Western Reef, off Clapperton Channel (*see* page 301), care must be taken before arriving in the locality, to have Clapperton Island lighthouse in the hollow of the hills at Fort La Cloche, bearing 060°. Having arrived at the above position, off the entrance to Gore Bay, a course of 172°, for 2¾ miles will take a vessel to Town Point, or a vessel may keep more to eastward and enter on the line of the leading lights.

25

From Gore Bay to Little Detroit, steer, from the above position off the entrance, 032° for 12 (10½ nautical) miles, passing between Innes and Darch Islands, to a position 1¼ miles from Boyd Island old lighthouse in line with the western Hiesordt Rock, bearing 358°, whence proceed as directed on page 311.

35

Coast.—Half a mile westward of Janet Head lighthouse, the clay bank is 148 feet (45^m1) high, and the coast turns away and runs straight southwesterly, nearly 2¼ miles, forming the east side of Julia Bay. A shallow bank fringes this shore, the edge being 150 yards (137^m2) off the lighthouse, and 250 yards (228^m6) at a half a mile west; thence the bank gradually narrows until half a mile from Hartney Cove, where the shore is steep-to. The northeast half of this shore is well marked by a clay bank.

40

Julia Bay is a deep and square indentation lying west of Gore Bay, contained between Janet Head and Blackstock Point. It is nearly 4 miles wide at the mouth and 3 miles long, and the water in it is very deep, there being 20

45

Chart 2287.

fathoms (36^m6) a quarter of a mile from the head of the bay. This fact together with the exposure to northerly gales, renders it unsuitable for anchorage, but should a vessel have to load timber here, the best places are a quarter of a mile 5 northward of Duroquet Point in the southwest corner.

Hartney Cove, situated in the southeast corner of Julia Bay, is a long and shallow inlet running in a northeasterly direction a third of a mile. A quarter of a mile westward from the mouth of this cove is a rocky bank, with 15 feet (4^m6) over it.

10 **Brymnner Bay**, with a smooth sandy beach, occupies the south corner of this bight.

Botterell Point is a rounding point, close to which the water is deep, situated a little less than half a mile northwestward of Brymnner Bay. A line running east from this point marks the depth of 3 fathoms (5^m5) over sandy 15 bottom. From Botterell Point, the south shore of the bay trends in a general westerly direction 1 $\frac{1}{3}$ miles to **Shoal Point** at the eastern entrance to Bayfield Sound. This strait at 1 $\frac{1}{2}$ miles from Duroquet Point is bridged over for the convenience of people living on Barrie Island, and is fit only for boats.

Duroquet Point, on Barrie Island, low and narrow, is situated half a mile 20 northwest from Shoal Point, and not more than 8 feet (2^m4) can be carried through between them. A reef, with less than 6 feet (1^m8) on it, extends southeasterly just halfway across to the Manitoulin Island shore. About 1 $\frac{3}{4}$ miles south- 25 westerly from Duroquet Point, a causeway joins Barrie Island to Manitoulin Island. From Duroquet Point, the west shore of Julia Bay continues in a general 25 northerly direction 3 miles to **Blackstock Point**, which bears 282°, and is distant nearly 5 miles from Janet Head lighthouse, and the cliffs, thickly wooded at the back of it, rise to a height of about 250 feet (76^m2). This point, as well as all the west shore of Julia Bay to Duroquet Point, may be approached to 200 30 yards (182^m9). The north coast of Barrie Island consists of five wooded head-lands very similar in appearance, enclosing four bays, the eastern and broadest of which is sometimes called **Blackstock Bay**. Of the points, the most northerly and conspicuous is Julia Point.

Julia Point is distant nearly 2 miles northwestward from Blackstock Point, shoal water makes out nearly a quarter of a mile northward of the point, and the 35 same distance from the western half of Blackstock Bay.

Osborn Point is the next southwest of Julia Point, being distant there- from 1 $\frac{1}{4}$ miles. A shoal, rock bank extends a good quarter of a mile from the Julia Point side of the bay formed between them.

Beer Point is situated nearly 1 $\frac{1}{4}$ miles west of Osborn Point, and from the 40 eastern side of the bay formed between them and a quarter of a mile from the latter, is a cluster of dry stones off which shoal water extends 300 yards (274^m3).

Creighton Point, the western one of the five before mentioned, is well marked, when viewed from the northwest, by a conspicuous clay bank 52 feet (15^m8) high, is situated just westward of the point itself; shoal water makes out 45 300 yards (274^m3) from the eastern part of the bay between Beer and Creighton Points. From the clay bank, the shore turns away and runs straight in a south- west direction 1 $\frac{1}{4}$ miles, whence it trends southeasterly for 1 $\frac{1}{2}$ miles forming the northeast shore of **Trout Bay**.

Chart 2287.

Horace Point is the northwest entrance point of the shallow rocky bay just alluded to, and which should be entered only by boats. A dangerous rocky bank extends over one-third of a mile northeast and north from Horace Point, falling like a wall to a depth of 12 fathoms (21^m9), while the same bank, though not so shallow, stretches two-thirds of a mile west of the point, at which distance there is 14 feet (4^m3) of water. This bank may be avoided by keeping the south-east extremities of Henry and Fanny Islands touching, and bearing 208°. 5

Jubilee Shoal (Lat. 45° 58' N., Long. 82° 44' W.) is the name given to the shoalest part of a bank 3¼ miles long on the northeast direction and two-thirds of a mile broad under a depth of 10 fathoms (18^m3). Jubilee Shoal has only 3 feet (0^m9) of water over boulders, and bears from Cape Robert lighthouse, 120°, distant 4½ miles. The north fall of Battery Bluff, over the highest part of Henry Island, leads over the rock. The shoal, under the depth of 18 feet (5^m5), is two-thirds of a mile long, with a greatest breadth of a quarter of a mile. 15

Clearing marks.—Julia Point in line with Creighton Point, bearing 077°, leads south; the southeast extremity of Henry Island touching the northwest side of Fanny Island, bearing 197°, leads west of Jubilee Shoal. The same extremity of Henry Island in line with the southeast end of Fanny Island, bearing 208°, leads east of Jubilee Shoal but does not clear Heron Patch. 20

Heron Patch, with 16 feet (4^m9) upon it, stands upon the same bank as Jubilee Shoal, and is distant therefrom in a northeast direction 1½ miles. It lies also 250 yards (228^m6) southward of the line joining Julia Point and Cape Robert.

Bayfield Sound is unsurveyed, but is presently being surveyed (1955). There are three indentations in the south shore of the sound, named **Elizabeth**, **Helen** and **Campbell Bays**, in that order from east to west. There is a Government wharf at the head of Helen Bay with a pierhead 84 feet (25^m6) long, with a least depth of 14½ feet (4^m5) alongside. Close eastward of the wharf is a submerged pier with its outer side in line with the face of the wharf. 30

Lake Wolsey, the extreme upper end of the sound is connected to Campbell Bay by a narrow channel, which is blocked by a causeway.

Fishery Point, a part of the western extremity of Barrie Island, is a narrow gravelly spit three-quarters of a mile southwestward of Horace Point, and affords shelter to boats employed in attending the pound nets in the locality. From Fishery Point, the coast of Barrie Island runs southerly three-quarters of a mile, with a rocky bank extending from it 300 yards (274^m3); it then turns southeastward forming a stony bight to **Dingy Point** distant three-quarters of a mile, farther than which the survey was not taken. 35

Charlie Island, small, 5 feet (1^m5) high and thickly wooded, lies a quarter of a mile westward of Dingy Point; scattered stones lie off its north and south sides, while to the west, shoal water makes out 250 yards (228^m6). 40

Gertrude Island is the northern of a group of islands lying in the mouth of the sound. Its eastern point lies 1½ miles, 255°, from Fishery Point. The western side is clifty, about 20 feet (6^m1) high, and slopes gently to the south. The water is good close to all but its southern coast, whence a shallow bank extends across to Henry Island, one-third of a mile distant. 45

Chart 2287.

The largest of the group, is **Henry Island** two-thirds of a mile in average diameter, about 30 feet (9^m1) high, and sparsely wooded; the southwest point may be approached to 300 yards (274^m3) but on all other sides a shallow sand-
5 bank makes out, there being only 13 feet (4^m0), 1 $\frac{1}{4}$ miles southwest from the southwest extremity of the island, while two-thirds of a mile in the same direction will be found the northwest end of a reef, with 3 feet (0^m9) of water on it. To the southeast and south, this sandy bank, with 5 to 7 feet (1^m5 to 2^m1) of water on it, extends 1 $\frac{1}{2}$ miles from Henry Island, leaving a narrow channel, with a
10 depth of 15 feet (4^m6) between it and the shoal from Elizabeth Point.

Eastward of Henry Island, the bank extends half a mile from the southeastern point, and one mile from the northeastern extremity, while northeastward, a reef, with less than 6 feet (1^m8) upon it, and in some places awash, joins Fanny Island.

15 **Buoy.**—A black spar buoy, equipped with reflector band, is moored on the southwestern extreme of the shoal water extending southward from Henry Island.

Fanny Island.—This double island, 5 feet (1^m5) high, is the northeastern and smallest of the three, shoal water extending from its southeast point a third of a mile in an easterly direction, and 200 yards (182^m9) northward from the
20 north end. Not more than 4 feet (1^m2) can be carried through between these islands. The northern of these two islands lies 1 $\frac{1}{2}$ miles, 247°, from Fishery Point, and half a mile, 056°, from the northeast extreme of Henry Island.

Buoy.—A red spar buoy marks the edge of shoal water, 4 cables eastward of Fanny Island.

25 **Elizabeth Point**, on the Manitoulin Island shore, is the west entrance point of the bay of that name, being situated 2 $\frac{1}{2}$ miles southwestward from Charlie Island; eastward of which line the survey was not taken. Shoal water extends from this point northeast 350 yards (320^m0), where there is but 11 feet (3^m7).

30 **Stanley Island**, nearly a quarter of a mile long north and south lies 1 $\frac{3}{4}$ miles south from the southwestern extremity of Henry Island and a little over a third of a mile westward from Elizabeth Point, and between is formed a shallow bay, with sand and clay bottom, containing a depth of 5 to 6 feet (1^m5 to 1^m8); a depth of 17 feet (5^m2) will be found a quarter of a mile north of Stanley Island.

35 **Sackville Island**, about 10 feet (3^m0) high and wooded like the last mentioned, is situated a quarter of a mile northwestward of Stanley Island. The water is deep near the north end, and shallow for 200 yards (182^m9) off the west side of the island, while between it and Stanley Island a vessel can carry 15 feet (4^m6) by keeping nearer to Sackville Island. From the south points of both these islands, narrow rocky spits extend in a southerly direction 250
40 yards (228^m6).

Battery Bluff is a steep cliff, 239 feet (72^m8) high, on the coast of Manitoulin Island southwestward of Sackville Island; between it and Elizabeth Point, the coast takes the form of two bays, the eastern and larger of which has been described in connection with Stanley Island. The shore under Battery Bluff
45 may be approached to 100 yards (91^m4), and is distant one-quarter of a mile from the south point of Sackville Island.

Chart 2287.

Cook Bay lies immediately westward of Battery Bluff, being formed between it and **Gauthier Point**; it runs in, southwesterly, over two-thirds of a mile, with a depth of 12 to 15 feet (3^m7 to 4^m6), mud bottom. Half-way along the south shore of the bay is a wharf and fishery establishment known as **Silverwater**. The Government wharf is 222 feet (67^m7) long with a berthing space at the outer end of 101 feet (30^m8) with a depth of $13\frac{1}{2}$ feet (4^m1). Shoal water extends 200 yards (182^m9) from the northwest side of the bay, reducing the anchorage space, which at the best is open to the north, and permits a heavy sea to roll in with gales from that direction. From Gauthier Point, the coast of Manitoulin Island trends in a general northwest direction $2\frac{1}{2}$ miles to Edward Bight, the shoal water extending 250 yards (228^m6) off Gauthier Point, and over one-third of a mile from the shore of Edward Bight.

Henry Patch, with 18 feet (5^m5) over sand, is situated one mile northward from Gauthier Point.

Buoy.—A red spar buoy, equipped with reflector band, is moored on the eastern side of Henry Patch.

Stony Island (*Lat. $45^{\circ} 55'$ N., Long. $82^{\circ} 50'$ W.*) is a small, low, wooded islet situated one mile southward of the Indian village of Sheshegwaning, being connected to the point 300 yards (274^m3) northward of it by a bank of dry stones. Shoal water extends 150 yards (137^m2) off this point and Stony Island.

Sheshegwaning is an Indian village situated $3\frac{3}{4}$ miles northwest from Cook Bay, and consists of a number of houses and a church; the latter, however, is not very conspicuous from the offing. An island, 200 yards (182^m9) long, separated from the main shore north of it by a narrow boat channel, shelters the cove well from east winds rendering it a good boat harbour. From this island, the coast runs northeasterly for 2 miles, and then gradually turns northward and northwestward to Cape Robert lighthouse. The whole of this Cape Robert shore may be approached to 200 yards (182^m9).

Directions.—If approaching Bayfield Sound from the west, pass a quarter of a mile from Cape Robert lighthouse and the northeast coast of the cape. and steer 155° , midway between Fanny Island and the west extremity of Barrie Island; having arrived at the latter position, proceed southward and anchor either a third of a mile southwest of Charlie Island in 4 fathoms (7^m3), sand or clay, or three-quarters of a mile east of the southeast extremity of Henry Island in 6 fathoms (11^m0) mud, with the east extremity of Cape Robert in line with the northeast side of Fanny Island, bearing 337° , and Charlie Island in line with Dingy Point bearing 087° .

The surveying steamer *Bayfield* in the first position rode out a heavy gale, the wind commencing at southeast, veering through south and ending at the northwest; when the wind came from the latter quarter, the swell from Cape Robert caused the vessel to veer a good deal but she rode with very little strain upon the cables on account of a current setting to windward out of the sound, probably the water driven down North Channel of Lake Huron by the gale, returning through Julia Bay.

If approaching from the east, pass a quarter of a mile from the clay bank at Creighton Point (Barrie Island) and head for the northwest side of Gertrude Island until the southeast extremities of Henry and Fanny Islands are in line, bearing 208° . Proceed now on this course to clear Horace Point Bank, and when

Chart 2287.

Charlie Island is open its breadth west of Barrie Island, bearing 155° , steer 172° at a moderate speed, with an occasional cast of the lead, passing rather nearer to Barrie than to Fanny Island to avoid the shoal bank extending from the
 5 latter, and anchor as previously directed.

A depth of 15 feet (4^m6) can be carried in between Henry Island sandbank and Elizabeth Point Spit, by keeping the north fall of **Cape Lambert** its height open of the point dividing Elizabeth and Helen Bays.

Battery Bluff Anchorage.—There is excellent shelter and holding ground
 10 between this bluff and Sackville Island in 3 fathoms (5^m5), with Cape Robert just showing westward of the latter. A vessel may also anchor in 15 feet (4^m6), swinging in not less than 12 feet (3^m7), mud bottom, in the mouth of the first bay southeast of Battery Bluff. If entering from the north, between the two islands, 15 feet (4^m6) may be carried in, by keeping 150 yards (137^m2) from the
 15 east coast of Sackville Island to avoid the bank making out from the west side of Stanley Island to nearly the middle of the passage.

If passing between Battery Bluff and Sackville Island, keep the former point on board to avoid the spit from the south end of the latter. The anchor should be let go in 15 feet (4^m6), mud bottom, with the north side of the Indian village
 20 of Sheshegwaning touching the southwest point of Sackville Island, bearing 326° , in conjunction with the west side of Barrie Island in line with the north-west extremity of Stanley Island, bearing 035° .

Cape Robert is the north extremity of the promontory dividing Bayfield Sound from Vidal Bay. It is the northernmost point in North Channel of Lake
 25 Huron, and from the westward its white clay banks render it unmistakable. A patch of stones lies 70 yards (64^m0), and a shoal spit extends 200 yards (182^m9) northward of the cape. A quarter of a mile southward of the cape the wooded land rises considerably.

Light.—Fog signal.—A *fixed white* light is exhibited, at an elevation of
 30 46 feet (14^m0), from a white, square building with a red lantern on Cape Robert. A hand fog-horn replies to vessels' signals.

Anchorage.—A vessel will find excellent shelter from westerly gales under the east shore of Cape Robert, $1\frac{1}{3}$ miles distant from the lighthouse, in 5 fathoms (9^m1) over sand and clay.

Cunningham Point, with the land falling steeply down to it, is situated
 35 $1\frac{1}{2}$ miles southwest from Cape Robert lighthouse. The northeastern part of the bay, formed between Cape Robert and this point, is of a cliffy character, conspicuous clay banks rising to a height of nearly 100 feet (30^m5) off which a very shoal rocky ledge extends a third of a mile.

From Cunningham Point, the shore trends southwestward $1\frac{1}{2}$ miles to **Cyril Cove**, fit only for boats. A clay bank, a quarter of a mile long, rises from the shore just southwest of Cunningham Point, off which shoal water extends 250
 40 yards (228^m6), the rest of the shore being approachable to 150 yards (137^m2).

Eaton Point is situated three-quarters of a mile westward from Cyril Cove
 45 Point; a reef of dry stones extends 300 yards (274^m3) northeastward from it while the bight, between Cyril Cove and it, is foul for a third of a mile. Shallow water makes off a quarter of a mile northward and northwestward of Eaton Point, and from the west gravelly extremity of the latter, the coast turns abruptly southward for two-thirds of a mile, forming the east shore of **Cole Bay**, from which
 50 a rocky bank extends a third of a mile.

Chart 2287.

Bayard Island, the ground of which is only 5 feet (1^m5) high, although the timber on it makes it appear much higher, is situated 1½ miles westward from Eaton Point; it is one-third of a mile long northwest and southeast by 250 yards (228^m6) broad in the middle and is connected to the west point of Cole Bay as well as to Laphorn Island by a shallow bank, affording a passage only for boats, while from the north end a reef makes out in a direction northwesterly for a distance of 300 yards (274^m3), where there is a depth of 15 feet (4^m6). The northeast side of the island may be approached to 200 yards (182^m9). 5

Bayard Reef, with 9 feet (2^m7) of water on it, lies parallel to the island of that name, and is half a mile long under the depth of 15 feet (4^m6). The outer shoal portion of the bank is situated half a mile northward from Bayard Island, and between them is a depth of 4 to 5 fathoms (7^m3 to 9^m1). 10

Laphorn Island, composed of two small islands close together, lies southwestward, one-third of a mile from Bayard Island leaving a boat passage between it and Manitoulin Island; its west side may be approached to 200 yards (182^m9). 15

Morris Island (*Lat. 45° 58' N., Long. 82° 56' W.*), low, wooded, a quarter of a mile long northeast and southwest, with its long narrow south point distant 100 yards (91^m4) from the main shore, lies one mile westward from Laphorn Island, and affords good shelter to the little boat cove south of it. The west side of Morris Island can be approached to 200 yards (182^m9). 20

The western portion of the coast, between Laphorn and Morris Islands, is foul for a third of a mile. The land of Manitoulin Island, at the back of Morris Island, is wooded and about 200 feet (61^m0) high, lessening its height as Cape Robert is approached. 25

Masson Island, small and low, lies one mile southwest from Morris Island, the shore between being fronted by scattered dry stones. For half a mile northeast of Masson Island, a bank extends from the shore half a mile, a depth of only 5 feet (1^m5) being found west a quarter of a mile from the island, while the north tongue of the bank, with 12 feet (3^m7) on it, is situated nearly half a mile northward from the same. 30

Clearing mark.—The northwest extremity of Bayard Island open north of, or touching the same side of Morris Island, bearing 061°, leads clear of this bank.

Buoy.—A black spar buoy is moored, in 17 feet (5^m2) of water, on the edge of the bank extending westward from Masson Island. 35

Vidal Bay is a long and broad indentation, the eastern side of which trends from Morris Island in a general southwest direction 4 miles to the head, where there is excellent anchorage and shelter in 5 or 6 fathoms (9^m1 or 11^m0). Vidal Island (*see* page 350) lies across the mouth of the bay, having a channel 1½ miles wide eastward of it, through which 3½ fathoms (6^m4) might be carried if buoyed. In the absence of buoys, 16 feet (4^m9) (in low stages there may be 6 feet (1^m8) less) can be carried in by attending to the directions (*see* below). 40

A depth of 12 feet (3^m7) may be carried southward of Vidal and Batture Islands and the reefs joining them, but as this channel is crooked and no intelligible leading marks could be found, it should not be attempted by a stranger. Good anchorage, in 4 fathoms (7^m3) over sand and clay, will be found two-thirds of a mile off the middle of the south coast of Vidal Island. 45

Chart 2287.

From Masson Island, the shore of Vidal Bay runs southeasterly three-quarters of a mile, forming a shallow bay the southern part of which is sandy, called **Creasor Bight**, where not more than 15 feet (4^m6), will be found nearly
 5 half a mile from the shore. The coast now trends southwesterly 2 miles and about southerly two-thirds of a mile to the eastern and deeper of two coves at the head of the bay, where a stream empties itself; this shore may be approached to 200 yards (182^m9). The unbroken west shore of Vidal Bay runs northward 1½ miles, and then northwesterly 2¾ miles to **Chamberlain Point**, to within a
 10 mile of which the shore may be approached to 100 yards (91^m4). The land around the shores of Vidal Bay is wooded, and rises to a height of about 150 feet (45^m7), a quarter of a mile back.

Buoys.—The west entrance channel to Vidal Bay is marked by two buoys off Chamberlain Point. A red spar is moored about one-half mile northwestward,
 15 and a black spar, 3 cables northward, of the point.

Vidal Island is 2 miles long east and west, one mile wide near its east end, and about 20 feet (6^m1) high on the north side, gradually sloping to the south shore, and thinly wooded.

Arthur Point, its most easterly projection, should not be approached nearer
 20 than 300 yards (274^m3). The coast from the point trends northwestward straight for three-quarters of a mile to the most northerly point of the island with good water, excepting the last 300 yards (274^m3).

Harold Point, the most southerly portion of Vidal Island, is situated half a mile southwestward of Arthur Point, and is important because of a shallow
 25 bank extending southeastward from it nearly three-quarters of a mile.

The north end of a patch, with 6 feet (1^m8) on it, lies nearly half a mile southeast from Harold Point, and a little less than that distance south from Arthur Point. A patch, with 15 feet (4^m6) least water on it, lies nearly three-quarters of a mile, 149°, from Harold Point, and a bank, a quarter of a mile
 30 long north and south, is situated, with its shoalest spot near the south end with 13 feet (4^m0) upon it, on the same bearing and distant 1·1 miles from the same point.

Clearing mark.—To lead northwest of the latter bank, keep the northwest extremities of Bayard and Morris Islands in line, bearing 061°, but this mark
 35 leads over the 15-foot (4^m6) patch.

Buoy.—A red spar buoy is moored, in 14 feet (4^m3) of water, on the southeastern side of the 6-foot (1^m8) patch off Harold Point.

The south coast of Vidal Island, low, shallow and strewn with dry stones, trends westward 1½ miles from Harold Point, and should not be approached
 40 nearer than half a mile by a vessel drawing 12 feet (3^m7). **West Point**, the western extreme of the island is foul, and joined to Batture Island by a barrier reef over which there is no passage for a vessel. Shallow water extends one-quarter of a mile northward of the point and the western half mile of the island. A very snug little boat harbour exists a quarter of a mile eastward of West Point,
 45 and between it and the north extremity of Vidal Island, distant 1½ miles, there, are two bays, in the western of which the deep water approaches close to the shore. In the eastern bay, a reef of dry stones extends 200 yards (182^m9) in a northeasterly direction from its west point. A patch, with 12 feet (3^m7) on it, lies 300 yards (274^m3) northward from the latter.

Chart 2287.

Crescent Island, about 3 feet (0^m9) high, consists of three distinct islands joined by stones; the southern is much the largest, and the timber on it is left in thick clumps with coarse grass growing on the gravel between. The island has still something of a crescent shape with the convex side facing northwest and it is quite possible that the resemblance was greater when Admiral Bayfield named it. This island is connected with the north extremity of Vidal Island by a ridge, over which not more than 10 feet (3^m0) can be carried. 5

A bank extends over one-third of a mile westerly from the western extreme of Crescent Island, at which distance there is 11 feet (3^m4). Shoal water follows around the west side of the island to a quarter of a mile westward of the northern islet, on the north side of which, however, the water is deep. Thence eastward, the shoal water gradually spreads farther out, only 12 feet (3^m7) being found a quarter of a mile eastward of the south gravelly point of Crescent Island. 10

Batture Island (Lat. 45° 58' N., Long. 83° 04' W.), 5 feet (1^m5) high and wooded, is 300 yards (274^m3) long east and west and 70 yards (64^m0) broad, and marks the western termination of the barrier reef joining it to West Point of Vidal Island, from which it is distant 2²/₃ miles. On the north side of the island, the water is good, and may be approached to 200 yards (182^m9), but from the western end a reef extends in a southwesterly direction a total distance of half a mile, where there is 15 feet (4^m6). At a quarter of a mile from the same, there is less than 6 feet (1^m8); care must therefore be taken to avoid it in entering Meldrum Bay from the east. 20

On the north side of the continuous reef joining Vidal and Batture Islands, there are two distinct patches, the western one with 14 feet (4^m3) over it, bearing 296°, distant 1½ miles, the other with 9 feet (2^m7) on it, bearing 309°, distant two-thirds of a mile from West Point of Vidal Island. Meldrum Point open well northward of Batture Island, the latter bearing 255°, leads northward of these patches. In thick weather, a vessel should not shoal the water to less than 10 fathoms (18^m3) between Crescent and Batture Islands. 30

Light.—A *flashing white* light is exhibited, at an elevation of 30 feet (9^m1), from a skeleton, steel tower with white, diamond-shaped daymark, on the northwest point of Batture Island.

Buoy.—A red spar buoy is moored on the edge of shoal water, extending about one-half mile southwestward of Batture Island. 35

Meldrum Bay is the westernmost indentation on the north coast of Manitoulin Island. The bay is contained between Chamberlain and Brittomart Points, nearly 4 miles apart, and, from the line of these points to Muriel Point, is nearly 3 miles long, with a breadth at the head of 1¾ miles. The land one-third of a mile back from the east and west shores is about 200 feet (61^m0) in height, the limestone cliffs occasionally showing through the partially burnt timber. The bay affords excellent shelter in westerly gales; a vessel may anchor in 10 fathoms (18^m3) in the southwest corner of the bay, or in 5 fathoms (9^m1), 300 yards (274^m3) southward of the wharf, keeping Mississagi Island light in sight. 40

Wharf.—The ell end of the Government wharf is 88 feet (26^m8) long, with a depth of 18 feet (5^m5) along the face. There is a warehouse on the outer end of the wharf. Steamers running from the southeastern ports of Georgian Bay to Sault Ste. Marie call regularly. In winter, mail communication is provided by carrier to Gore Bay. 45

Chart 2295.

Light.—Fog signal.—A *fixed red* light is exhibited, at an elevation of 25 feet (7^m6), from the corner of a shed on the Government wharf at Meldrum Bay. A hand fog-horn replies to vessels' signals.

- 5 **Chamberlain Point** is the east entrance point of Meldrum Bay, and from it a ledge, with 10 feet (3^m0) on it, extends in a northeast direction a quarter of a mile. Two-thirds of a mile eastward of Chamberlain Point, the bank joins that connecting Vidal and Batture Islands, and with the assistance of a couple of buoys placed on this ridge, it is possible that 15 or 16 feet (4^m6 or 10 4^m9) might be carried between Vidal and Meldrum Bays. The steamer *Bayfield* in the year 1888, crossed the ridge from Vidal Bay on two ranges, with 12 feet (3^m7) least water, by keeping a conspicuous little fall in the land on the southeast shore of Vidal Bay open its height of the west shore of the same bay, bearing about 121°, until Cape Robert came halfway between Vidal and Crescent Islands, 15 bearing about 078°, which mark was kept on astern.

From Chamberlain Point the east shore of Meldrum Bay trends 2½ miles southward with three slight indentations to **Whitly Point**; and for 1½ miles from Chamberlain Point it should receive a berth of 300 yards (274^m3); the remainder may be approached to half that distance.

- 20 **Muriel Point**, at the head of Meldrum Bay, divides it into two large coves, the southeast one between it and Whitly Point being known as **Newbery**, the western one named **Macrae Cove**.

- Welch Island**, in Newbery Cove, small and wooded, lies 120 yards (109^m7) offshore and nearly half a mile eastward of Muriel Point, and midway between 25 the island and Whitly Point is a rocky bank, with less than 6 feet (1^m8) of water over it. A vessel should not pass inside or southward of the line joining these points.

- Macrae Cove** is deeper, and the head may be approached to within 300 yards (274^m3). A snug, but shallow, little boat harbour is situated on the west 30 shore of this cove, west of Muriel Point. A vessel may anchor between this boat harbour and Muriel Point, in 10 fathoms (18^m3) over mud.

- From the wharf, the west shore of Meldrum Bay runs north two-thirds of a mile, gradually inclining westward, with good water 150 yards (137^m2) off as far as **Brittomart Point**. This point, the west entrance point of Meldrum 35 Bay, has a spit extending from it 150 yards (137^m2), and a large bank under the depth of 10 fathoms (18^m3) reaching 2 miles east and over one mile northwestward of it, the shoalest part with 4 fathoms (7^m3) on it taking the name of **Danville Ground**, and bearing 327°, distant three-quarters of a mile from Brittomart Point.

- 40 **Meldrum Point**, a little over one mile west of the latter, is the name given to the gradually rounding northwest extremity of Manitoulin Island. It may be considered also, the east entrance point from North Channel to Mississagi Strait, being distant from the lighthouse of that name by the coast line 6 (5¼ 45 nautical) miles. The point is backed at a distance of 300 yards (274^m3) by a cliff about 200 feet (61^m0) high, mostly obscured by trees. A fringe of shoal water extends 150 yards (137^m2) from the western part of Meldrum Point, which, therefore, should not be hugged too closely by a heavy draught vessel from Lake Huron.

(For Mississagi Strait, see Chapter III, page 56).

CHAPTER XI

MELDRUM POINT AND MISSISSAGI BAY TO SUGAR ISLAND, WITH ST. JOSEPH CHANNEL

DATUM.—See page 1.

Chart 2297.

Cockburn Island belongs to Canada. It is about 9 (8 nautical) miles in diameter and is easily distinguishable by a broad and partly cleared hill nearly 3 miles back from the village of **Cockburn Island** and called McQuaigs Hill, about 480 feet (146^m3) high.

Channel Point (Lat. 45° 58' N., Long. 83° 16' W.) is the northeast extremity of Cockburn Island, and the west entrance point of Mississagi Strait from North Channel of Lake Huron. It is gradually rounding, and steep-to. The wooded land over Channel Point is about 100 feet (30^m5) high.

(For description of east coast of Cockburn Island and Mississagi Strait, see pages 56 and 57).

Robinson Bay is a broad indentation immediately westward of Channel Point, and a vessel, running from Lake Huron in a southwest gale, will find good anchorage, in 4 to 6 fathoms (7^m3 to 11^m0) over sand, by not approaching the head of the bay nearer than a quarter of a mile.

Cockburn Island Village is situated in the southeast corner of Tolsma Bay distant 2 miles west from Channel Point.

There are two wharves, the old Government wharf extending northerly 510 feet (155^m4) from shore, with a depth of 18½ feet (5^m6) (below 578·5) at the outer end, and the new Government breakwater, about 500 feet (152^m4) east of the old wharf, extending northeasterly 449 feet (136^m9) from shore and thence easterly 87 feet (26^m5) with 17 feet (5^m2) at the outer end.

The western side of the old wharf is preferable as a berth. In approaching it, vessels should keep well out in deep water until the wharf is end on and then steer directly for it. Considerable sea is felt here in a northerly gale. In approaching the new breakwater, vessels should keep well out in deep water, until the eastern end of the breakwater bears south, then proceed with not more than 13½ feet (4^m1) draught to the end of the breakwater and secure on either side. The south side affords a safe berth in any storm. A bank extends 200 yards (182^m9) offshore from Ross Point, immediately eastward of the village.

Vessels, running out of Lake Huron in heavy weather, will find anchorage in 7 or 8 fathoms (12^m8 or 14^m6), sand and mud, in Tolsma Bay, half a mile north-westward of the old wharf. A customs outport of entry, a post office and telephone service to Manitoulin Island are maintained at the village.

Between Ross Point and the village is a considerable indentation with a sandy shoreline and bottom, in which small craft have been moored, it being too shallow and exposed for vessels of large draught. From the gravelly point sheltering this cove, a shallow rocky bank extends halfway to the wharves and in approaching the latter, care should be taken to keep northward of this bank.

Chart 2297.

Lights.—A *fixed white* light is exhibited, at an elevation of 16 feet (4^m9), from an iron mast on the wharf at Cockburn Island Village.

A *fixed red* light is exhibited, at a height of 12 feet (3^m7), from a pole with red 5 and white daymark, on the outer end of the breakwater.

Buoys.—Two black and one red spar buoy, equipped with reflector bands, the outer pair being moored 500 feet (152^m4) off the outer end of the breakwater, indicate the channel of approach to the latter.

Thompson Point, the northern extremity of Cockburn Island, is low and 10 wooded, and may be approached to 150 yards. (137^m2). An indentation called **Burnt Cove** is formed under and southeastward of Thompson Point, and in the mouth of this indentation, midway between the point and island a third of a mile southeastward of it, a vessel may anchor in 4 fathoms (7^m3) sandy bottom, with shelter from westerly gales. The island just alluded to, on the southeast side 15 of the bay, has shoal water extending 300 yards (274^m3) from its north side.

Foul ground extends eastward from Thompson and northerly from **Pitman Point**, as the northwest point of Tolsma Bay is called. These rocky patches have a least depth of 3 $\frac{1}{4}$ fathoms (5^m9) over them; the outer and shoalest one named **Pitman Bank** being two-thirds of a mile offshore.

Wiggins Bank, with 9 fathoms (16^m5) least water on it, is the shoalest part of a raised plateau, with less than 20 fathoms (36^m6) over it, extending from the northeast side of Cockburn Island, the northeast extreme, with that depth, being 3 $\frac{1}{4}$ miles distant northward from Channel Point. The soundings on this bank will be serviceable to a vessel bound from St. Joseph Channel to Mississagi 25 Strait, if enveloped in the fogs, which often roll in through the latter from Lake Huron in spring.

Monk Point is situated 2 $\frac{3}{4}$ miles westward of Thompson Point, and may be considered the eastern entrance point of False Detour Channel from North Channel of Lake Huron; a flat extends 300 yards (274^m3) from the eastern part 30 of the point. Speaking generally, the northern coast of Cockburn Island may be considered free from dangers.

Chart 2295.

Drummond Island.—**Marble Head**, its eastern extremity, is a gradually rounding wooded headland, about 100 feet (30^m5) high, forming the northwest 35 entrance of False Detour Channel from North Channel of Lake Huron, and is quite steep-to. Drummond Island is in the state of Michigan, U.S.A.

(For the southeast coast of Drummond Island and False Detour Channel, see Chapter III, page 59).

Pilot Cove is a snug little indentation on the northwestern extremity of 40 Marble Head. It is possible, excepting in low stages, to take a short vessel drawing 9 feet (2^m7) of water into Pilot Cove, inside which she will be perfectly sheltered from all gales. The narrow channel, having a sharp turn, is difficult of access for a sailing craft without the assistance of warps. A vessel, if seeking shelter from heavy weather in North Channel, will do better by rounding Marble 45 Head and anchoring under the eastern shore, about halfway between Marble Head and the southeast point of Drummond Island; a vessel will here find a good berth near some pound net stakes in 4 to 5 fathoms (7^m3 to 9^m1), clay bottom.

Chart 2295.

Glen Point is situated $1\frac{1}{3}$ miles northwest from Pilot Cove, the bight between them being named **Sitgreaves Bay**, in which a vessel will find anchorage, with suitable winds, in 7 to 8 fathoms (12^m2 to 14^m6), mud bottom; a shallow gravel spit extends northwestward one-third of a mile from Glen Point. 5

Glen Cove is an indentation immediately west of Glen Point, being two-thirds of a mile wide and half a mile deep and, under the gravel spit above mentioned, a small vessel will probably be able to ride out a northeast gale in a depth of 12 to 15 feet (3^m7 to 4^m6). In taking up this berth, the west shore of the cove should be kept on board to clear the spit. 10

From Glen Cove, the northeast wooded coast of Drummond Island runs fairly straight $3\frac{1}{3}$ miles to **Shoal Point** in a northwesterly direction. For the first $2\frac{1}{2}$ miles, the shore may be approached to one-quarter of a mile when the shoal water joins Lindsay Bank.

Lindsay Bank, with 13 feet (4^m0) of water over it, is situated with its eastern extremity $1\frac{1}{2}$ miles southeastward from Shoal Point and a little over three-quarters of a mile from shore. 15

Humphrey Rock, with 11 feet (3^m4) least water on it (in low stages there may be 4 feet (1^m2) less), is an extensive and dangerous patch lying a little over three-quarters of a mile northeasterly from Shoal Point and one and a quarter miles from Lindsay Bank. Other patches, having $3\frac{1}{2}$ to $4\frac{1}{2}$ fathoms (6^m4 to 8^m2) over them, lie southward and northward from Humphrey Rock. Northward from Shoal Point itself, not more than 9 feet (2^m7) will be found at the distance of a quarter of a mile. 20

Clearing mark.—Poe and Raynolds Points touching, and bearing 293° , lead well north of all this ground. 25

Colton Bay, the mouth of which is blocked with stones, is situated three-quarters of a mile northwestward from Shoal Point, and off this bight a shallow rocky flat makes out northeastward, five-eighths of a mile.

Raynolds Point (*Lat. $46^\circ 05' N.$, Long $83^\circ 35' W.$*) is rather nearer Chippewa Point than Marble Head and its timber gives it the apparent height of 100 feet (30^m5); its limestone shore is quite steep-to; northward of Raynolds Point and southeastward, $1\frac{3}{8}$ miles, the coast can be approached to 300 yards (274^m3). On the northwest side of the point, **Raynolds Bay**, stony and shallow, runs in three-quarters of a mile. 35

Poe Point, westward $2\frac{1}{3}$ miles from Raynolds Point, marks a slight change in the direction of the north coast of Drummond Island, and the coast between it and Raynolds Bay may be approached to 150 yards (137^m2). For one mile westward of Poe Point, the shore should receive a berth of 200 yards (182^m9).

Chippewa Point, distant $4\frac{1}{4}$ miles westward from Poe Point, is the northwest extremity of Drummond Island, and marks the limit of the Canadian Government survey in this direction. Shoal water extends a quarter of a mile northward from Chippewa Point, and the shore is foul as far as the point one mile eastward of it. 40

Chippewa Bank, in Canadian waters, with $3\frac{1}{4}$ fathoms (5^m8) of water on it, lies northwest, distant three-quarters of a mile from Chippewa Point. 45

Chart 2295.

Ontario Bank, in Canadian waters, is an extensive elevation of the bottom, somewhat similar to Wiggins Bank from the northeast side of Cockburn Island, and occupying the same relative position to Drummond Island. The least
5 water on Ontario Bank is 7 fathoms (12^m8) over rocky bottom and bears 020°, distant 2 $\frac{3}{4}$ miles from Pilot Cove. The remarks about the soundings on Wiggins Bank (*see* page 354) are equally applicable to this bank, for a vessel proceeding into Lake Huron by False Detour Channel from St. Joseph Channel.

**The northern side of North Channel of Lake Huron from Supply
10 Point** (*see* page 338).

Siccorde Point is the outermost island 1 $\frac{1}{4}$ miles westward of Supply Point, and being almost joined to others, gives this portion of the broken up coast the appearance of a point. The bight between Joliette Islands and Siccorde Point is foul, and a vessel should not stand into a less depth than 4 $\frac{1}{2}$ fathoms
15 (8^m2).

Flat Point lies 4 $\frac{1}{2}$ miles westward of Siccorde Pointe, the coastline between them being indented by numerous little bays and fronted by small islands and rocks. Siccorde Point itself may be approached to a quarter of a mile, but the bank extending from the shore between it and Flat Point gradually widens until
20 abreast of the latter, when only 18 feet (5^m5) will be found over three-quarters of a mile from the shore. A reef of dry stones makes out from the islet at Flat Point for 300 yards (274^m3). A reef, with 2 feet (0^m6) of water on it, lies south-west a third of a mile from the outer end of the boulders just alluded to; on the northwest side of Flat Point is a broad cove open to the west, but in which a boat
25 will find shelter in easterly gales.

Dobie Point is a slight projection, 1 $\frac{1}{4}$ miles westward from Flat Point, and 200 yards (182^m9) southeast of the point is a cluster of dry stones.

Le Sable, so called from its sandy beaches, is the name given to the Indian reserve situated midway between Flat Point and Thessalon. There are about
30 2 miles of this beach, the middle of which is situated south of Hagans Hill. The coast between Dobie Point and the west end of Le Sable is strewn with dry stones and sunken rocks, the edge of the 3-fathom (5^m5) bank extending from it an average distance of two-thirds of a mile.

Butcher Boy Bank, with 10 feet (3^m0) of water over it, lies over three-
35 quarters of a mile from the shore 1 $\frac{2}{3}$ miles eastward of the eastern end of Le Sable. This danger lies also 4 $\frac{1}{4}$ miles westward from Flat Point.

Hagans Hill, before mentioned, is the name given to the partially cleared and conspicuous rise, 285 feet (86^m9) high, situated nearly 2 miles in from Le Sable.

Livingstone Creek is situated 2 miles westward from the west end of Le Sable and 3 $\frac{1}{2}$ miles eastward of Thessalon. It is not discernible from the vessel's track, as it breaks through the shoreline at an acute angle. It is too narrow and shallow to be of much commercial value, though logs are occasionally brought down. A small vessel can carry 6 feet (1^m8) to the cottage situated
45 200 yards (182^m9) from the mouth. The shore between Le Sable and Livingstone Creek is very foul, and not more than 3 fathoms (5^m5) will be found at over half a mile from the shore. For 2 $\frac{1}{4}$ miles westward of Livingstone Creek, the coast is very much indented and fronted for half a mile by rocks and islets. However,

Chart 2295.

the 5-fathom (9^m1) line parallels the shore at a distance averaging five-eighths of a mile. South of the western end of the shallow beach above described is a 3-fathom (5^m5) spot (*see below*), three-quarters of a mile from shore, and a little over one and three-quarter miles, 080°, from Thessalon Point lighthouse. 5

From the above 3-fathom (5^m5) spot, shoal water trends north half a mile, then northwest, the same distance, passing close to the main shore, when it curves southwesterly, half a mile, forming a deep water bay, where more than 6 fathoms (11^m0) will be found, except for a shoal on which lies Fly Rock.

Fly Rock, with less than 6 feet (1^m8) of water over it, is situated five-eighths 10 of a mile northwestward from the 3-fathom (5^m5) spot described above.

Thessalon, with a population in 1951 of 1,595, is situated on the east side of the point from which it derives its name and is 11½ (10 nautical) miles eastward from Bruce Mines. The river of the same name flows through the town and debouches on the east side of the peninsula. In the channel leading from 15 deep water into the river, the depth is reported to be 3 feet (0^m9). On the west side of the peninsula is a Government wharf 325 feet (99^m1) long, extending to a depth of 22 feet (6^m7), and with a depth of 14½ feet (4^m4) in the berth 150 feet (45^m7) in length on each side. Another Government wharf on the east side of the peninsula, 342 feet (104^m2) long with an ell end 100 feet (30^m5) in length, has 20 a depth of about 17 feet (5^m2) along the face.

Connecting a cluster of dry rocks lying southeast of the town is a break-water 700 yards (641^m0) in length, protecting the wharf and the inner part of the harbour.

The town is connected by motor-bus with the Canadian Pacific Railway 25 station 1½ miles distant. The white spire of the Presbyterian Church, the numerous houses, and the smokestacks and sawdust burners of the mills render the town easily discernible from the offing.

Leading lights.—Fog signal.—Two *fixed green* leading lights are exhibited at Thessalon. The front light is exhibited at an elevation of 23 feet (7^m0), from 30 a steel mast with white, diamond-shaped daymark, on the north side of the east wharf; the rear light is exhibited, at an elevation of 40 feet (12^m2), from a similar structure, 1,650 feet (502^m9), 018° from the front light.

A hand fog-horn replies to vessels' signals, from the front light.

Buoy.—A red spar buoy is moored, in 17 feet (5^m2) of water off the western 35 edge of the bank referred to above, on the east side of the entrance.

Thessalon Point (*Lat. 46° 14' N., Long. 83° 34' W.*) is the southern extremity of a remarkable peninsula sheltering the town from the west. At a little over three-quarters of a mile in from the point, and a quarter of a mile from the mouth of the river, the neck is only 33 yards (30^m2) wide. The extremity of 40 the point may be approached to 200 yards (132^m9).

Light.—A *flashing white* light is exhibited, at an elevation of 30 feet (9^m1), from a white, square building surmounted by a red lantern, on the southern extremity of Thessalon Point.

Anchorage.—There is good holding ground and shelter from westerly gales 45 on the east side of Thessalon Peninsula, in 5 to 6 fathoms (9^m1 to 11^m0) about half-way between the point and town, but with easterly gales considerable sea

Chart 2295.

rolls in. In making Thessalon, in thick weather, it should be remembered that the 10-fathom (18^m3) line approaches the extremity of the point to a third of a mile, and the water should not be shoaled to less than this depth until the land
5 is recognized.

Vessels will find good shelter for loading, in the bay just east of the town, being sheltered by the breakwater.

Directions.—If from the east, the course from a position one mile south from Talon Rock, to Thessalon light is 288°, and distance 20½ (17¾ nautical)
10 miles. The line of the leading lights will be picked up about one-half mile eastward of the main light and bearing 018°, leads to the east wharf. If wishing to make fast to the southern wharf as soon as Roberts Hill (at the back of Macbeth Bay) is over the end of the southern wharf bearing 320°, the latter may be steered for.

15 If from the west, Thessalon Point may be rounded at 200 yards (182^m9) and the leading lights brought into line as above.

Macbeth Bay is an excellent harbour 3 miles northwestward from Thessalon Point. It is the first landlocked harbour on the north shore westward of Serpent Harbour, distant in a straight line 44½ (39 nautical) miles. The village and rail-
20 way station of **Nesterville** are located in this harbour, the former being distinguishable from offshore by the remains of an old mill burner, smokestack, and shipping pier. It is sheltered from the more open water of North Channel of Lake Huron by islands below described, commencing on the east:—

Bald Rock, 10 feet (3^m0), high, is a small bare rock lying 100 yards (91^m4)
25 off the point situated 1¾ miles northward from Thessalon Point. The track to Macbeth Bay generally used is nearly 100 yards (91^m4) west of this rock.

Gooseberry Island, 10 feet (3^m0) high and divided in the middle, is situated over 2 miles northwestward from Thessalon Point. It is separated from Chevalier Islands northwest of it by a channel two-thirds of a mile wide, which,
30 is not to be recommended to strangers on account of the rocks lying westward of Gooseberry Island. A dry rock lies 300 yards (274^m3) westward of Gooseberry Island, and two rocks, 7 feet (2^m1), high are situated about the same distance eastward of its south point.

Gereaux Rock, with 9 feet (2^m7) on it, lies eastward, nearly midway
35 between the last mentioned two rocks and the main shore. The vessels' track passes eastward of it.

A small, sparsely wooded island, 7 feet (2^m1) high, lies a quarter of a mile eastward of the north point of Gooseberry Island, and between them is a depth of 11 feet (3^m4). The north and east sides of this little island are steep-to. A
40 narrow gravel spit makes out in a northeasterly direction 100 yards (91^m4) from the north point of Gooseberry Island.

Kalulah Rock, 9 feet (2^m7) high, lies three-quarters of a mile west from the south point of Gooseberry Island; on this line and nearly mid-distance is a rock, with 7 feet (2^m1) of water over it. This spot, together with two other patches
45 with 11 and 15 feet (3^m4 and 4^m6) over them, nearer Gooseberry Island than Kalulah Rock, renders this passage difficult to navigate without the aid of buoys. A small rock, with 6 feet (1^m8) of water over it, lies a quarter of a mile westward from Kalulah Rock.

Chart 2295.

Roberts Hill is a sparsely wooded, conspicuous hill 400 feet (121^m9) high, situated 1 $\frac{2}{3}$ miles northwestward from the head of Macbeth Bay.

St. Ange Island, 10 feet (3^m0) high, is a small, wooded island on the east side of Macbeth Bay, and a little more than a third of a mile southward from the mouth of the creek. The depth of 3 fathoms (5^m5) approaches to within 200 yards (182^m9) of the south side of St. Ange Island. At the head of the bay is the sawmill already mentioned. 5

Chevalier Islands take their name from a French half-breed, who at one time resided on the western and larger of the two islands, which shelter the harbour; the larger island is 28 feet (8^m5) high, and the two measure five-eighths of a mile east and west. A rock, with 10 feet (3^m0) over it, lies 300 yards (274^m3) eastward of the eastern Chevalier Island, leaving a depth of 3 fathoms (5^m5) between them. A flat extends 150 yards (137^m2) northward from the west extremity of the larger Chevalier Island. 10 15

Fréchette Island, 17 feet (5^m2) high, is a round, smooth islet, a quarter of a mile westward of the big Chevalier Island, being joined thereto by rocks, dry and sunken. The deepest passage into Macbeth Bay, though not the one generally used, will be found westward of Fréchette Island, between it and the little group 12 feet (3^m7) high lying close to the northwest shore. 20

Africa Rock, 7 feet (2^m1) high, consisting of a flat rock with a few blocks of stone scattered about it, is situated northeastward 2·1 miles from the south point of Birch Island or southwest 1·1 miles from Fréchette Island. A rock, awash, lies nearly a third of a mile eastward from Africa Rock, and a patch, with 15 feet (4^m6) on it, is situated northeast two-thirds of a mile from the same. Shoal water encircles Africa Rock for a distance of 200 yards (182^m9). 25

Maggie Rock, with 12 feet (3^m7) over it, is an outlying patch lying a little over 1 $\frac{1}{4}$ miles southeast from Africa Rock.

Asia Rocks, 4 feet (1^m2) high, close together and dark coloured, lie nearly one mile southwestward from the south point of Africa Rock, and a patch, with 9 feet (2^m7) of water on it, is situated nearly a quarter of a mile southward of these rocks. Several shoals lie between them and the main shore, but will not be described, as the passage northward of Asia Rocks is not to be recommended. 30

Birch Island (*Lat. 46° 15' N., Long. 83° 41' W.*), about 20 feet (6^m1) high and thickly wooded, is nearly three-quarters of a mile long northwest and southeast, and over one-third of a mile in maximum breadth. It lies a mile westward from Asia Rocks, and is connected to the main shore by a bank, on which there is only sufficient water for large boats. The south point, as well as the islet 4 feet (1^m2) high, with a single bush on it (1914), lying 150 yards (137^m2) eastward of it, is steep-to, and vessels proceeding to Bruce Mines or St. Joseph Channel may approach it to 100 yards (91^m4). A pinnacle rock, with only 2 feet (0^m6) of water over it, lies nearly a mile, 100° from the north end of Birch Island. It is a dangerous obstruction to vessels passing between the islands and Asia Rocks. 35 40

Directions.—Approaching Macbeth Bay from the east, when half a mile west of Thessalon Point lighthouse, steer for Bald Rock, bearing 000°. Pass 100 yards (91^m4) west of it and 200 yards (182^m9) from the mouth of the first bay north of it, using the lead. When Kalulah Rock is touching the south point of Gooseberry Island, bearing 266°, a vessel will be passing Gereaux Rock 45

Chart 2295.

(which should be buoyed) about 150 yards (137^m2) westward of it. When across the narrow ridge, with 16 feet (4^m9) of water (in low stages there may be 4 feet (1^m2) less), it will deepen to 4 fathoms (7^m3), and a vessel should haul north-
5 westward to pass 50 to 100 yards (45^m7 to 91^m4) northeastward of the small, round wooded island, and thence proceed to the anchorage under Chevalier Island, in $3\frac{1}{2}$ to 4 fathoms (6^m4 to 7^m3) mud bottom.

If entering from the west, when past the islet at the south point of Birch Island, keep the south sides of it and Cedar Island in line, bearing 261° , until the
10 summit of Roberts Hill comes over the west end of Fréchette Island and steer for this range, bearing 005° until 300 yards (274^m3) from Fréchette Island. Pass 50 yards (45^m7) westward of the latter (this side is steep-to), haul eastward in mid-channel and anchor under the two Chevalier Islands, as convenient. This is the deepest passage in, and if the range is rigidly adhered to, not less
15 than 5 fathoms (9^m1) will be found until inside Fréchette Island.

In thick weather, a vessel should not shoal to less than 10 fathoms (18^m3) between Birch Island and Thessalon Point.

Cedar Island, 10 feet (3^m0) high, is situated nearly $1\frac{1}{2}$ miles westward of Birch Island and is somewhat larger than the latter, but being flat and thickly
20 wooded presents a similar appearance. It is $2\frac{2}{3}$ miles northeastward from Big Point of St. Joseph Island and $4\frac{1}{2}$ miles southeastward from the wharves at Bruce Mines. Its western side may be approached to 200 yards (182^m9), but its south point should receive a berth of a third of a mile.

Calf Island, small, low and thickly wooded, lies a little over a third of a
25 mile eastward of the northern portion of Cedar Island, being joined thereto by a gravel bank on which there is less than 6 feet (1^m8) of water. The east side of Calf Island may be approached to 200 yards (182^m9) but its north point should receive a berth of double that distance.

The coast between Birch Island and Bruce Mines is indented by several
30 bays, the eastern half being almost hidden by several large islands which afford a smooth channel for boats in rough weather.

Long Island is the middle one of the string, and its western point is situated 2 miles northwestward from the northern extremity of Birch Island.

Alicia Rock, with 4 feet (1^m2) on it, lies two-thirds of a mile southeastward
35 from the west point of Long Island.

At a distance of a little over a third of a mile westward from the west point of Long Island is a small rock, 3 feet (0^m9) high, and from it a cluster of sunken rocks, with less than 6 feet (1^m8) of water on some of them, extends west under the name of **Long Bank** for a distance of one mile, the western end being distant
40 two-thirds of a mile southeast from the small but conspicuous islet with tall pines on it called **Little Island**. Patches, with 12 to 15 feet (3^m7 to 4^m6) of water over them, lie southward of the main bank, but the whole may be passed southwestward of, by keeping the south end of Calf Island touching the north point of Cedar Island, bearing 122° , but should not be continued too far north-
45 westward, as it leads very close northeast of Prout Rock (*see* page 362).

Pallideau Island, the largest and northwesternmost of the string, is situated a third of a mile northwest of Long Island, but, unlike it, is high, the summit attaining a height of about 80 feet (24^m4).

Joe Dollar Bay is the name given to the large indentation northward of
50 Pallideau Island.

Chart 2295.

Eagle Point is the promontory dividing the last mentioned bay from a broad indentation, the northern shore of which takes the form of two shallow coves; that nearer Eagle Point being called **Hay Bay**, and the northwestern arm, Garden Bay. Between **Garden Bay** and Jacks Island will be noticed the buildings of the Dominion Trap Rock Co., and the ore stamping mill. A dredged channel leads to these works (*see* Bruce Mines). A third of a mile northwestward of Eagle Point will be found anchorage, in 3 fathoms (5^m5) over mud, and with shelter from easterly gales. 5

Little Island, already alluded to, lies a quarter of a mile southward from Eagle Point, and is a conspicuous feature in approaching the harbour of Bruce Mines from the southeast. With the exception of a narrow spit, extending 100 yards (91^m4) from the western side, the island has good water about it. The track to Bruce Mines passes about a third of a mile southwestward of Little Island. 10 15

Bruce Mines takes its name from the old Bruce copper mine which was opened in 1846, followed by the Wellington in 1858; both belong now to the Bruce Mines Copper Co., Limited, of St. Catharines, and were operated periodically between 1900 and 1909; since then they have stood idle. The town is supported by a good farming community. The planing mill and sawmill and the large rock crushing plant of the Dominion Trap Rock Company have not been active in recent years. 20

The town, with a population in 1951 of 370, has good stores, schools, churches, and a bank. The local post office acts as a Customs office and the telegraph office is located in the Canadian Pacific Railway station, about 2 miles north of the town. Steamship connection to Owen Sound, Manitoulin Island, and Sault Ste. Marie is available. The Government wharf, which extends about 1,000 feet (304^m8) into the harbour, has a pierhead 90 feet (27^m4) square on which is located a freight shed. Along the faces of the pierhead there is a depth of 17 and 19 feet (5^m2 and 5^m8). The remains of the old Bruce Mines Copper Company wharf lie east of the public wharf with the outer end about 200 feet (61^m0) distant from the pierhead. 25 30

Dredged Channels.—Leading to the outer corner of the Government wharf is a channel 150 feet (45^m7) wide and 870 yards (795^m4) in length with a reported depth of 16 feet (4^m9). Its approximate direction to the wharf is 327°, and the western edge is marked by four black spar buoys. A turning basin at the wharf is 250 feet (76^m2) wide. 35

Leading to the Dominion Trap Rock Company works, east of Jacks Island, is a dredged channel bearing about 010°, 2,000 feet (609^m6) long and 150 feet (45^m7) wide. There is 17½ feet (5^m3) of water abreast of the works and a least depth of 20 feet (6^m1) in the channel. The channel is not buoyed. On the eastern side of the works, right in line with the channel, is a dangerously situated area with depth of as little as 6 feet (1^m8). This channel should not be attempted without local knowledge. 40

Jacks Island (*Lat.* 46° 18' N., *Long.* 83° 47' W.), 40 feet (12^m2) high at its southern end, is situated nearly a mile northwestward from Eagle Point and half a mile southeastward from the head of the Government wharf. The depth, 300 yards (274^m3) from the south side of Jacks Island, is 3 fathoms (5^m5). 45

McKay Island is the outer of two islands sheltering the harbour from the southwest. A boat passage exists between McKay Island and the other called **French Island**, and also between the latter and McCort Point. A rocky 50

Chart 2295.

spit extends 100 yards (91^m4) from the east point of McKay Island, to avoid which keep Burroughs house in line with the west side of Jacks Island, bearing 354°.

- 5 **Barney Rock**, with less than 6 feet (1^m8) of water over it, lies 200 yards (182^m9) south of McKay Island and is connected to it by shoal water.

Lights.—Fog signal.—A *fixed red* light is exhibited, at an elevation of 15 feet (4^m6), from a lantern on the roof of a warehouse on the outer end of the Government wharf at Bruce Mines.

- 10 A hand fog-horn replies to vessels' signals.

A *fixed white* light is exhibited, from a white, square dwelling, surmounted by a red lantern on the eastern extremity of McKay Island.

Anchorage.—On the northeast side of McKay Island, there is a good anchorage in 3 fathoms (5^m5).

- 15 **Prout Rock**, with 7 feet (2^m1) of water on it, lies 141°, distant one mile from McKay Island light. The mark above mentioned (*see* Long Bank, page 360) leads between it and Long Bank but close to the rock, and the south end of Birch Island touching the north point of Calf Island, bearing 106°, leads southward of Prout Rock.

- 20 **Buoy.**—Prout Rock is marked by a red spar buoy, moored southwest of it.

McKay Reef, awash, is situated southwestward, a little over three-quarters of a mile from McKay Island lighthouse.

- 25 **Beacon.**—The reef is marked by a triangular open slatwork beacon, painted white, but should it be down, the houses near the lighthouse at the village of Hilton touching the north side of Gravel Point, bearing 258°, will lead close south of it and the other shallow spots about it.

- 30 **One Tree Island**, so called from a conspicuous pine tree growing on it in 1890, is the most prominent feature on the north shore westward of McKay Island, from which it is distant nearly 3 miles and bears 295°. Many sunken rocks lie off One Tree Island, but, as the passage northward of McKay Reef is not recommended, only the most outlying shoals will be alluded to.

Jennie Rock, with 5 feet (1^m5) of water on it, lies two-thirds of a mile southeastward from One Tree Island.

- 35 A patch, one-third of a mile east and west, with 12 feet (3^m7) least water on its western end, lies three-quarters of a mile eastward from Jennie Rock.

- 40 **Directions.—Birch Island to Bruce Mines.**—Pass 200 yards (182^m9) southwest of Birch Island, and steer for Little Island, passing a good quarter of a mile northeastward of Calf Island; when clear of the spit off the latter, keep a more westerly course, so as to gradually bring the south point of Calf Island, touching the north end of Cedar Island, bearing 122°. This range astern will lead between Long Bank and Prout Rock but close to the latter. When Prout Rock is passed, the public wharf end on, bearing about 328°, may be steered for, which will lead to the entrance of the dredged cut.

- 45 If passing southward of Cedar Island (the better track for a stranger), give its southern side a berth of half a mile, and when approaching Prout Rock, if the buoy be not on it, bring the west side of Jacks Island as directed in the next paragraph.

Chart 2295.

If from the passage between St. Joseph and Drummond Islands, a vessel will pass a quarter of a mile west of Prout Rock by keeping Burroughs house in line with the west side of Jacks Island, bearing 354° .

The outlying islands and shoals will now be described:—

5

Cumberland Rock, 3 feet (0^m9) high, occupies a solitary position, 243° , distant 3·2 miles, from Talon Rock (*see* page 337) near La Salle Island and 098° , $2\frac{1}{4}$ miles from the north extremity of East Grant Island. A spur makes out 50 yards (45^m7) in a northeast and 100 yards (91^m4) in a southeast direction. A rock, with 15 feet (4^m6) on it, lies nearly a quarter of a mile westward from Cumberland Rock; with these exceptions, the water is deep about it. 10

Grant Islands.—This name applies to a group occupying a space of $3\frac{3}{4}$ miles long east and west. They are called East, Middle, and West Grant Islands, the first mentioned being the largest and highest. Middle Island is small and separated from the first mentioned by a deep channel. A passage not so deep or wide isolates it from West Grant, and Bird Island northward of the latter. 15

East Grant Island has an extreme length of a mile in a northeasterly and southwesterly direction, and attains an elevation of 65 feet (19^m8). Its north-west side is indented by a broad open bay, on the northern part of which is situated an oval-shaped island 26 feet (7^m9) high, named Fishery Island. 20

Small craft will find shelter in any storm in the channel between Fishery Island and East Grant Island, close up to the most easterly point of the former. The safe approach is from the deep bay southward of Fishery Island.

Fishery Island is separated from the main island by a channel 150 yards (137^m2) broad, through which 16 feet (4^m9) may be carried, but, on account of its sharp turn, is not recommended. A vessel, seeking shelter in an easterly gale, will find anchorage in the bay west of East Grant Island in 13 fathoms (23^m8) over mud. In heavy westerly weather, a vessel will find good anchorage under West Grant Island. 25

A rock, awash, lies 250 yards (228^m6) northwestward of Fishery Island and generally shows itself by breaking; a shallow spur extends 100 yards (91^m4) further westward. A passage for a light-draught vessel exists between the rock, awash, and the island. The north side of East Grant Island may be approached to 200 yards (182^m9), there being 12 fathoms (21^m9) at this distance, but from the northeastern point a reef extends in an easterly direction nearly a quarter of a mile. 35

Herbert Island (*Lat.* $46^{\circ} 08' N.$, *Long.* $83^{\circ} 16' W.$), about 8 feet (2^m4) high, is situated half a mile eastward of the southern extremity of East Grant Island. On the south side of Herbert Island the water is deep, but on the east and northwest sides, shoal spits make out 200 yards (182^m9). A cluster of dry stones lies a quarter of a mile north of Herbert Island and the same distance from the southeast side of the main island; shallow spits extend 200 yards (182^m9) in a northwesterly and opposite directions from this cluster. The southeast side of the main island should not be approached nearer than three-quarters of a mile, at which distance there is 12 fathoms (21^m9). An isolated lump, with 15 feet (4^m6) on it, lies 200 yards (182^m9) off **South Point** of East Grant Island. Off the western extremity of South Point is a submerged rock close to shore. 40 45

Ivor Rocks, the highest of which is 7 feet (2^m1) high, lies close to the extremity of the long point forming the south side of the bay of East Grant Island already mentioned, leaving a narrow passage between them and the point of the 50

Chart 2295.

main island. The depth of 12 fathoms (21^m9) will be found 100 yards (91^m4) westward of the largest Ivor Rock, but the northern small rock group of this should not be approached nearer than 300 yards (274^m3).

5 **Middle Grant Island**, about 30 feet (6^m1) high, is triangle-shaped, the sides being about 300 yards (274^m3) long and deep water approaches close to its north-west side. It lies $1\frac{3}{4}$ miles west of South Point of East Grant Island. Shoal water makes out from its southwest side 200 yards (182^m9), while eastward and northward from it are the following isolated rocks:—

10 **Leo Rock**, with 6 feet (1^m8) of water on it, lies nearly a quarter of a mile northward from the north gravelly point of Middle Grant Island, and between them there is a depth of 7 fathoms (12^m8).

Clearing mark.—To pass northward of this rock, keep the northwest point of West Grant Island well open northward of Anchor Island, bearing 251° .

15 A rock, with 11 feet (3^m7) on it, lies 300 yards (274^m3) eastward from the same extremity of Middle Grant Island, and two rocks, with 10 and 5 feet (3^m0 and 1^m5) over them, lie southeastward two-thirds, and one third of a mile, respectively, from Middle Grant Island.

20 **Clearing mark.**—The northwest side of Fishery Island in line with the point east of Ivor Rocks, bearing 041° , leads southeast of these patches.

West Grant Island is beset by shoal water and very much indented, the shallow bay on the southwest side of it almost dividing it. From the northeast extremity of this island a shallow flat makes out one-third of a mile south-easterly.

25 Shoal water extends one-quarter of a mile from the south side and three-eighths of a mile westward from the southwest point of the island.

30 A reef, with 5 feet (1^m5) of water over it, lies a quarter of a mile southwest from the mouth of the old fishing cove on the southwest side of the island and almost joins the shore. Rocks, with less than 6 feet (1^m8) of water on them, extend 350 yards (320^m0) northward from the northwestern extremity of West Grant Island and serve to break the sea, and to smooth the water at the anchorage. In passing between Bird and Anchor Islands, the master of a vessel must be careful to keep northward of this shallow ground.

35 **Bird Island**, 12 feet (3^m7) high and in two parts, is situated a third of a mile northward of the main island, and helps to shelter the anchorage (*see* page 365). With the exception of a spur marking out 50 yards (45^m7) from its eastern extremity, both it and the small dry rock north of it are steep-to.

40 **Anchor Island**, 6 feet (1^m8) high, lies on the north side of the main island and nearer to it than Bird Island, from which it is separated by a passage 270 yards (234^m6) wide with a depth of 5 fathoms (9^m1). Anchor Island is joined to the northwest point of the main island by a chain of shallow sunken rocks, affording no passage for anything but boats. A narrow gravel spit extends 100 yards (91^m4) from its southern extreme toward the main island.

45 A rock, with 13 feet (4^m0) of water on it, lies on a line joining the eastern part of West Grant to Middle Grant Island, and is rather nearer the former.

Horne Rock, awash and generally breaking, is situated over one-third of a mile southwesterly from the western end of West Grant Island. Shoal water runs from the rock halfway to the west extremity of the island, leaving a passage 150 yards (137^m2) wide through which 4 fathoms (7^m3) may be carried in an
50 emergency.

Chart 2295.

Barrett Bank, with 10 feet (3^m0) of water on it, lies southwestward, distant $1\frac{1}{4}$ miles, from the west extremity of West Grant Island.

Clearing marks.—To pass westward of this bank, keep East Hill (4 miles north of Thessalon) in line with the northeast extremity of Bigsby Island, bearing 327° . To pass between Barrett Bank and Horne Rock, keep Roberts Hill a little inside or southwest of the same extremity of Bigsby Island, bearing 316° . The north end of East Grant Island in line with the north side of Bird Island, bearing 079° , leads northward of Barrett Bank, and a vessel may approach the south side of the bank until the south points of East and West Grant Islands are in line, bearing 083° .

Fisk Reef, with 2 feet (0^m6) of water on it, is a dangerous obstruction of solid rock and stones, 400 yards (365^m7) long southwest and northeast, situated with the first mentioned extremity, bearing 170° , $2\frac{2}{3}$ miles from the east point of Bigsby Island. This shallow patch stands near the southwest end of a bank, which under 10 fathoms (18^m3) is $1\frac{3}{4}$ miles in extent. On this same bank, there are three other patches with $3\frac{1}{4}$ fathoms (5^m8) on them; the northernmost, named **McGlashan Patch**, lies 146° , distant 2 miles, from the east extreme of Bigsby Island, and 030° , one mile from the north end of Fisk Reef; the easternmost, named **Crowley Reef**, lies 138° , distant over $2\frac{3}{4}$ miles, from the same island; the third patch lies near the centre of the triangle formed by lines joining Fisk Reef, McGlashan Patch, and Crowley Reef.

A channel, over one mile wide, exists between this 10-fathom (18^m3) bank and Bigsby Island, and another, half a mile wide, between this bank and Barrett Bank.

Caution.—Care must be taken at night or in thick weather when passing the reef, as 10 fathoms (18^m3) will be found 200 yards (182^m9) southwest and south of it.

Clearing marks.—To pass southward of Fisk and Crowley Reefs and northward of Barrett Bank, keep the north extremities of East Grant and Bird Islands in line, bearing 079° . The south extremities of East and West Grants in line, bearing 083° , will lead two-thirds of a mile south of Fisk Reef. The south ends of East Grant and Anchor Islands in line with the north point of West Grant Island, bearing 093° , leads close northward of this reef.

The **East Hill** mark for leading west of Barrett Bank (*Lat.* $46^\circ 08' N.$, *Long.* $83^\circ 22' W.$) also leads three-quarters of a mile northeastward of Fisk Reef; but over one of the $3\frac{1}{4}$ -fathom (5^m8) patches (in low stages there may be 4 feet (1^m2) less). The west fall of Hagans Hill in line with the east extremity of Bigsby Island, bearing 358° , leads west, and the opposite end of Bigsby Island, under East Hill, bearing 330° , leads very close northeast of Fisk Reef.

Anchorage.—Good shelter in westerly gales may be found north of the eastern part of West Grant Island, sheltered from north winds by Bird Island; from west winds by Anchor Island and the spit from its south end, and by the shoals which break the sea between Anchor Island and the west point of West Grant Island. A vessel should anchor, in 4 to $4\frac{1}{2}$ fathoms (7^m3 to 8^m2) clay bottom, just sufficiently far offshore to swing clear of Anchor Island Spit (which is steep-to) and the coast of the main island. In easterly weather a vessel will be more comfortable at East Grant Island (*see page 363*).

Directions.—In daylight and clear weather, a vessel may pass between the Grant Islands by the following directions—

If from the east, pass a quarter of a mile or less southwestward of East Grant Island, and steer to pass about that distance west of Ivor Rocks to make

Chart 2295.

sure of being eastward of Middle Grant Shoals. When the northwest extremity of West Grant opens northward of Anchor Island, bearing 252° , Leo Rock will be passed and a vessel may steer for Bigsby Island.

- 5 A vessel may pass through between Middle and West Grant Islands by keeping the gap in the two parts of Bird Island in line with the northeast extremity of Bigsby Island, bearing 299° . She may then pass on either side of Bird Island and steer thence for Bigsby Island. To pass between the Grants and Bigsby Island, see the various leading marks for clearing Fisk Reef and Barrett
10 Bank previously alluded to. At night or in thick weather do not shoal to less than 20 fathoms (36^m6) on the south side of the Grants and Fisk Reef.

- Bigsby Island**, 5 feet (1^m5) high, wooded and almost divided into three distinct islands by shallow bays, lies with its northeast point, bearing 284° , distant $7\frac{1}{4}$ ($6\frac{1}{3}$ nautical) miles from the north point of East Grant Island. Consider-
15 ing its ragged shape, the water is deeper about it than would be expected. The west side is the foulest, there being only 7 feet (2^m1) a third of a mile from the sharp, stony northwest point. Shoal water makes out half a mile southwesterly from the western points and nearly a quarter of a mile from the south and south-east sides. The otherwise boldness of the northeast gravelly extremity is spoiled
20 by a narrow shallow gravel spit extending from it nearly 100 yards (91^m4).

A flat makes out southwestward from Bigsby Island, on which not less than $3\frac{1}{2}$ fathoms (6^m4) was found, situated a little over three-quarters of a mile westward from the west point of the island. In passing southward of Bigsby Island, it should receive a berth of half a mile.

- 25 **Sulphur Island** is nearly half a mile long north and south, and including the small islet, called **Maggs Island**, on the west side, is about the same breadth. The island, 40 feet (12^m2) high, lies $8\frac{1}{4}$ ($7\frac{1}{4}$ nautical) miles, 259° from Bigsby Island, and is distant from Drummond Island 3 miles, the boundary between Canada and the United States passing two miles southward of it.

- 30 **Light**.—A *flashing white* light is exhibited, at an elevation of 49 feet (14^m9), from a white, octagonal tower, near the southern extremity of Sulphur Island. The light is observed from 144° through south to 228° .

- The lighthouse point may be approached to 150 yards (137^m2) and the east side of the island is quite steep-to, but from the north and northeast sides, a
35 shallow ledge makes off 300 yards (274^m3). Shallow water extends the same distance from the southwest shore of this island and a quarter of a mile northwesterly from Maggs Island.

- Shepherd Reef**, with 5 feet (1^m5) of water over it, is a dangerous obstruction, lying 047° , distant $1\frac{3}{4}$ miles from the north point of Sulphur Island; within
40 the depth of 3 fathoms (5^m5) the shoal is nearly a quarter of a mile in diameter, the whole of which may be cleared by attention to the following:—

- Clearing marks**.—To pass southward of Shepherd Reef, keep Chippewa Point of Drummond Island closed or in line with the northwest point of Sulphur Island, bearing 238° . The whole of Maggs Island open northwest of Sulphur
45 Island, bearing 217° , leads northwest. The southwest point of Cedar Island in line with the southwest extreme of Thessalon Island, bearing 304° , leads 300 yards (274^m3) northeast, and the same part of Thessalon Island touching the north point of Cedar Island, bearing 314° , leads nearly the same distance southwest of the reef.

- 50 Approaching the reef from the east in thick weather, a vessel should not shoal to less than 12 fathoms (21^m9), as that depth will be found 300 yards (274^m3) east, south and southwest of Shepherd Reef.

Chart 2295.

Gull Island, small, round, partially wooded, and 23 feet (7^m0) high, lies nearly a mile northwesterly from Sulphur Island and its eastern side is steep-to.

Sam Smith Rock, with 11 feet (3^m4) over it, lies west two-thirds of a mile from Gull Island.

A rock, with 12 feet (3^m7) over it, lies a quarter of a mile southward from the same, and to pass southwest of both these shoals keep the lighthouse point of Sulphur Island opened south of Maggs Island, bearing 130°. The north side of Gull Island may be approached to 200 yards (182^m9) and keeping mid-distance between Sulphur and Gull Islands a vessel will find a depth of 8 fathoms (14^m6).

In thick weather, a vessel will keep southward of Sulphur and Gull Islands shoals by not standing into less than 12 fathoms (21^m9).

Thessalon Island is situated 3½ miles southwestward from the mainland point of that name (*see* page 357). It is thickly wooded, nearly 1¼ miles in length in a northwesterly and southeasterly direction, and is fringed by shoal water on all sides. On its northeast side, isolated rocks, with depths of 12 to 13 feet (3^m7 to 4^m0) over them, prevent a nearer approach than a third of a mile, while from its northern coast shallow water extends 300 yards (274^m3). Its western coast including the detached island may be approached to 200 yards (182^m9).

Kangaroo Rock, 7 feet (2^m1) high, consisting of a few blocks of stone, lie a third of a mile southward from the southwest point of Thessalon Island. Its west and south sides are fairly steep-to, being approachable to 200 yards (182^m9). A reef extends 300 yards (274^m3) from its eastern side, and a detached rock, with 4 feet (1^m2) over it, lies 200 yards (182^m9) northeastward from it, while from this detached rock a bank, with 12 feet (3^m7) on it, runs to the southwest point of the island. Between the spit extending 200 yards (182^m9) from the latter, and the 4-foot (1^m2) rock, there is a passage for a light-draught vessel. Eastward of Kangaroo Rock, the coast of Thessalon Island should not be approached nearer than a quarter of a mile.

Serpent Island (*Lat.* 46° 11' N., *Long.* 83° 41' W.) is situated 2¾ miles southwestward from Thessalon Island. The ground of the island is low, but the timber gives it the appearance of a compact little island a quarter of a mile long, north and south. The north point is clean, but shallow water extends 250 yards (228^m6) eastward of the island, and a bank, with 13 feet (4^m0) over it, makes out a third of a mile from its southwest coast.

Milford Haven is a well sheltered harbour on the eastern side of St. Joseph Island. Pecks Point, the northeast entrance point of the haven, marks the southern limit of the Canadian survey of this coast, as does a line drawn from Beef Island to Chippewa Point (*see* page 355). On the northeast shore of the haven, a little less than a third of a mile from Pecks Point, is a sawmill, and a wharf in fair condition.

(*For Potagannissing Bay, surveyed by the United States Government, see Chapter XII, page 380.*)

Perrique Island is a narrow collection of stones and gravel with a few trees on it, 250 yards (228^m6) long north and south, situated northwest 3½ miles from Chippewa Point (page 355), and 2¾ miles eastward from Pecks Point. A spit, with 9 feet (2^m7) on it, makes off from the north point 250 yards (228^m6), and a reef with less than 6 feet (1^m8) on it, extends a quarter of a mile from its south point; the eastern sides of Perrique Island and the south reef are steep-to. The mark for clearing the south end of Colville Bank (*see* page 368) leads also south of the shoal water from Perrique Island.

Chart 2295.

O'Donnell Island, 20 feet (6^m1) high, is the southern and larger of the two which lie one mile westward of Perrique Island; it is the highest island in this vicinity, is partly cleared, and its south and west sides may be approached to
5 200 yards (182^m9).

(For *Maple, Seine, and Salt Islands*, also belonging to Canada, see page 385.)

Colville Island, nearly a quarter of a mile northeasterly from the above, is the same length north and south, and is joined to O'Donnell Island by shallow water. Shallow water extends nearly one-quarter of a mile north of the island
10 and there is a 3-fathom (5^m5) spot, three-eighths of a mile north from the same north extremity of Colville Island. A rock, with 15 feet (4^m6) of water on it, lies northwest one-third of a mile from the north point of Colville Island and nearly in the middle of the passage, but the depth on the rock is not likely to affect the few vessels using the passage.

Colville Bank is an extensive patch, with less than 6 feet (1^m8) on it in places, commencing on the east side of Colville Island where it extends three-eighths of a mile eastward, and gradually curving southward, leaving however, a
15 passage 250 yards (228^m6) wide, with a depth of 4 fathoms (7^m3) between it and Perrique Island. The total length of this bank is nearly a mile, and its south
20 end may be cleared by keeping the south point of Beef and O'Donnell Islands in line, bearing 291° .

Light-buoy.—A red light-buoy, showing a *flashing red* light, is moored on the south extreme of Colville Bank opposite the black light-buoy off North Seine Island (see page 385).

Beef Island, the south point of which lies five-eighths of a mile eastward from Pecks Point, is joined to the next mentioned by a shallow sandbar with
25 about one foot (0^m3) of water over it. A shoal spit makes off from its north point 200 yards (182^m9) and a reef, with 3 feet (0^m9) of water on it, lies northwest a
30 quarter of a mile from the same extremity, leaving a narrow passage between it and the island through which 14 feet (4^m3) was carried in 1890. The west and
southeast sides of Beef Island may be approached to 150 yards (137^m2).

Wallace Island is the largest of the group, being separated from Emily Island by a narrow channel through which 3 fathoms (5^m5) can be carried. A
35 flat makes off from the north point of Wallace Island a quarter of a mile, but its eastern side may be approached to half that distance.

Emily Island is the smallest of those which front Richmond Bay, and the shore between it and Milford Haven. Its east coast may be approached to 300
yards (274^m3) but the island is almost joined to Richmond Point, from which it is distant one-quarter of a mile, by a reef of dry stones.

Lyon Cove is the first small bay north of Pecks Point, and between it and Beef Island good anchorage may be had in 3 fathoms (5^m5), mud bottom. Anchorage may also be had under the west side of Wallace Island with the same
40 depth and bottom.

Richmond Bay is the broad but shallow indentation westward of the point
45 of that name, distant 2 miles northward from Pecks Point.

Caradoc Point is the next projection one mile northeastward of Richmond Point. Detached stones lie 50 to 70 yards (45^m7 to 64^m0) off Caradoc Point, but the deep water comes sufficiently near to allow the point to be approached to 150 yards (137^m2).

Chart 2295.

Fox Island, about 10 feet (3^m0) high and wooded, situated three-quarters of a mile eastward of Caradoc Point, is a little over a quarter of a mile long north and south and 200 yards (182^m9) wide. Its east side may be approached to 200 yards (182^m9), but from its other sides shoal water extends a greater distance. 5

Ironsides Reef extends two-thirds of a mile northward from the north point of Fox Island. It has an average breadth of 300 yards (274^m3) and is composed of a few boulders, one to 2 feet (0^m3 to 0^m6) high, and several with very little water over them. The north end of this reef may be avoided by keeping the north points of Gull and Serpent Islands in line, bearing 107°. 10

West Rock, with 7 feet (2^m1) of water over it, lies northwestward 350 yards (320^m0) from the inside sandy point of Fox Island.

South Bank extends a little more than a quarter of a mile southward from the south point of Fox Island, the outer part having only 2 feet (0^m3) of water over it. Between West Rock and South Bank, shoal water extends from the island 200 yards (182^m9). The south shore of Mosquito Bay in line with Caradoc Point, bearing 328°, leads clear of South Bank. 15

A 3-fathom (5^m5) spot lies half a mile southward from the south point of Fox Island, and a 6-fathom (11^m0) channel, 200 yards (182^m9) wide, separates it from South Bank. 20

Big Point may be considered the south entrance point of St. Joseph Channel from the east, and, with the exception of a flat extending 200 yards (182^m9) off, is clean. The southeastern extreme of this wide point is distant nearly 2¼ miles northward from Caradoc Point, and the land close back of the point is high and wooded. 25

Mosquito Bay is the name of a shallow boat harbour situated mid-distance between the above two points, the northern shore having shallow rocks lying off a quarter of a mile.

Recollet Point is situated 2 miles westward from Big Point, the indentation between them, named **Moffat Bay**, having good anchorage, in 4 to 6 fathoms (7^m3 to 11^m0), clay bottom. Shoal water extends one-third of a mile from the head of the bay. 30

The coast, from Recollet Point, trends westward three-quarters of a mile, then northward, one mile, and eastward half a mile, to **Old Quarry Point**, forming **McMenomy Bay** from the shore of which shoals extend an average distance of a third of a mile. 35

Gravel Point (Lat. 46° 16' N., Long. 83° 50' W.), situated 3½ miles northwest from Big Point, is high and wooded, and derives its name from its high gravelly beach. The water close to it is deep.

Chart 2288.

St. Joseph Channel is the passage separating St. Joseph Island from the mainland of the District of Algoma; from Bruce Mines on the east of Sugar Island of the United States on the west, it is 17¾ (15½ nautical) miles in length. The eastern entrance, between Bruce Mines and Big Point, is broad and the channel keeps wide for 7 miles to Sister Rocks. Hence to Bamford Island (4¼ miles farther), the channel is narrowed by islands, being only 100 yards (91^m4) wide at Wilson Channel, the name given to the passage rather nearer Sugar Island than Bruce Mines. 40 45

Chart 2288.

From Bamford Island to Shoal Island lighthouse, a distance of nearly $4\frac{1}{2}$ miles, the channel from shore to shore (called by some Bear Lake) is broader, but the shoals from the north shore limit the width of the navigable passage considerably. After passing the narrows at Shoal Island lighthouse, the channel again widens for $1\frac{1}{4}$ miles to the dredged and buoyed channel between St. Joseph and Sugar Island.

The two places requiring the greatest care, in navigating St. Joseph Channel, are the vicinities of Bamford and Shoal Islands on account of the sunken rocks (usually buoyed) and strong current.

A stranger should not attempt St. Joseph Channel at night, but will have no difficulty (when the buoys are in position) in navigating in daylight, by following the directions herein given, which will lead him over not less than 15 feet (4^m6) of water.

A vessel from Lake Superior bound to the southeastern ports of Georgian Bay, by using St. Joseph Channel and North Channel of Lake Huron, would have comparatively smooth water from Sault Ste. Marie to Badgeley Island, before emerging into the open waters of Georgian Bay, adding considerably to the comfort of passengers in the autumn without a great increase of distance.

In treating of St. Joseph Channel, it will be divided into three portions, Gravel Point to the Sisters, the Sisters to Bamford Island, and the latter to St. Marys River.

(For One Tree Island and the coast east of it, see page 362).

Cooper Rock, with less than 6 feet (1^m8) of water over it, lies half a mile westward from One Tree Island. A 3-fathom (5^m5) spot is situated one-quarter of a mile westward from this rock.

Ten Rib Rock, with one foot (0^m3) over it, lies nearly half a mile, 253° from One Tree Island. A patch with 10 feet (3^m0) on it, lies a quarter of a mile westward and another patch, with 14 feet (4^m3), lies 270 yards (246^m8) southward from Ten Rib Rock.

Buoy.—A red spar buoy is moored westward of the above 10-foot (3^m0) patch.

Crebo Rock, with 12 feet (3^m7) over it, lies three-eighths of a mile southwest of One Tree Island. A patch, with 14 feet (4^m3) and another 16 feet (4^m9) lie, respectively, 200 yards (182^m9) southward and 350 yards (320^m0) eastward from it.

Avis Ground, with 18 feet (5^m5) least water on it, is situated five-eighths of a mile southwesterly from One Tree Island.

Hawkes Shoal lies 200 yards (182^m9) north of the track generally followed by vessels entering St. Joseph Channel, and is situated half a mile southeastward from Avis Ground.

Beer Rock, with 10 feet (3^m0) on it, is situated 1.1 miles westward from One Tree Island. If approaching Portlock Harbour from the southeast, Woodman Point in line with the west side of the northeast Piercy Rock, bearing 327° , will lead between Beer and Ten Rib Rocks in good water, but very close south of the 3-fathom (5^m5) patch west of Cooper Rock.

A narrow shoal, nearly one-third of a mile long and running southeasterly from its shallowest spot of 12 feet (3^m7), is situated one-quarter of a mile eastward from Beer Rock. A 3-fathom (5^m5) spot will be found 200 yards (182^m9) southeastward of the shoal. Shallow areas extend half a mile westward from Beer Rock.

Chart 2288.

Buoy.—The above named shoal is marked on the southeastern side by a black spar buoy.

Piercy Rocks consist of five islets, the highest of which is 11 feet (3^m4) high; they lie 1½ miles northwestward of One Tree Island, and mark the southeast and main channel into Portlock Harbour. 5

Hannah Ground is the name given to several rocky patches lying two-thirds of a mile southwestward of Piercy Rocks, the least water on them being 13 feet (4^m0).

A narrow shoal, nearly one-third of a mile long east and west, with 13 feet (4^m0) least water over its centre, lies three-eighths of a mile from the southern Piercy Rock and on the line joining it with Hannah Ground. A shallow spot, with 15 feet (4^m6) of water over it, lies west of the above shoal being separated from it by a narrow channel.

Jackson Rock is a 5-foot (1^m5) rock lying half a mile westward from the southern Piercy Rock. 15

Biggar Rock, with 9 feet (2^m7) of water over it, lies one-quarter of a mile westward of Jackson Rock. Close to this rock, a shoal and a 3-fathom (5^m5) patch extend one-quarter of a mile southeastward from the rock.

Another shoal, one-eighth of a mile long with 16 feet (4^m9) of water over it, and a 3-fathom (5^m5) patch lie three-eighths of a mile south of Biggar Rock and the same distance westward of Hannah Ground. 20

Plummer Island is the largest of a group separated from Portlock Island by a channel through which there is a passage for a light draught vessel. Shoal water extends half a mile southeastward from the east extremity of the island, a little over one-third of a mile south of the same point and half a mile southwestward from the west point of the island. 25

Plummer Bank, with 9 feet (2^m7) least water on it, lies with this, its shoalest place, one-third of a mile southwestward of Plummer Island, and three-quarters of a mile southeastward from West Sister Rock lighthouse. The bank may be crossed with 18 feet (5^m5) by keeping the summit of Walker Island in line with the present outer end of the lighthouse landing jetty, bearing 336°. In 1914, the beacon not being discernible, the supply steamer *Simcoe* drawing 13½ feet (4^m1) passed between the red light-buoy and the black spar buoy, with the jetty in line with the stone hut on a summit of Boswell Island, bearing 340°. 35

From the 9-foot (2^m7) depth of this bank, shallow water extends five-eighths of a mile eastward, one-eighth of a mile south and half a mile westward. An isolated 9-foot (2^m7) spot will be found half a mile east of the above-mentioned 9-foot (2^m7) spot, and a 3-fathom (5^m5) rock 200 yards (182^m9) northwestward of the western end of Plummer Bank. 40

Buoys.—The channel across Plummer Bank is marked by a red light-buoy, showing a *flashing red light*, and a black spar buoy.

Caution.—The bottom in this locality being very uneven, a vessel should slow down and keep the lead going.

The Sisters (Lat. 46° 18' N., Long. 83° 55' W.) consist of four small rocks lying between the eastern extremity of Campement d'Ours and Portlock Islands. **South Sister**, one foot (0^m3) high, is quite bare and joined to the former by shoal 45

Chart 2288.

water; **East Sister**, 4 feet (1^m2) high, with a bush on it lies one-third of a mile westward from the western point of Plummer Island; **North Sister** has the wooden foundation of the old lighthouse and lies 200 yards (182^m9) northwestward from East Sister, and **West Sister**, occupied by the present lighthouse, is situated 500 yards (457^m2) east of the eastern extremity of Campement d'Ours Island.

Light.—A *flashing white* light is exhibited, at an elevation of 35 feet (10^m7), from a white, hexagonal tower with red lantern on West Sister Rock.

10 West Sister Rock should be passed on the western side.

Coast.—From Gravel Point, the coast of St. Joseph Island trends a little southward of west $2\frac{3}{4}$ miles to **Hilton Beach**, with a population in 1951 of 206. It has a post office and frequent steamer connection with Sault Ste. Marie, Owen Sound, Collingwood, and intervening ports. The nearest Customs port of entry is Bruce Mines; the land in the neighbourhood is reported fertile. 15 Distant about 150 yards (137^m2) southeast of the wharf is a sawmill.

Wharf.—An ell-shaped concrete wharf in good condition extends 260 feet (79^m2) from the shore, and thence 200 feet (61^m0) southeastward, affording shelter to vessels drawing less than 10 feet (3^m0). On the outer front of the wharf, 20 the depth at low stage of the water is 17 feet (5^m2), but on the northwest side, 100 feet (30^m5) from the outer end, the depth is 13 feet (4^m0).

Between this wharf and the lumber wharf just east of it, a basin was dredged to the hard stone bottom, but to a depth not greater than 9 feet (2^m7) at the stage of low water, where small craft can find shelter.

25 **Light.**—**Fog signal.**—A *fixed red* light is exhibited, at an elevation of 12 feet (3^m7), from a lantern on the freight shed on the wharf.

A hand fog-horn replies to vessels' signals.

Fisher Shoal, with less than 6 feet (1^m8) of water on it lies a quarter of a mile northwest from the shore of the bay of that name, and three-quarters of a mile 30 east of Hilton wharf. A shoal, with a least depth of 12 feet (3^m7) of water over it, bears 337° , distant about 1,400 feet (426^m7) from the light on the outer end of the wharf at Hilton Beach.

Buoy.—A black spar buoy marks the eastern side of this shoal.

The thickly wooded shore runs northwesterly $3\frac{1}{4}$ miles from Hilton Beach to 35 **Canoe Point**, the southeast entrance point of **Desjardins Bay**, the name given to the eastern half of the boat channel dividing Campement d'Ours from St. Joseph Island. A vessel will find good water close to the above shore, which can be approached to 150 yards (137^m2).

40 **Wharf.**—Gawas Bay wharf, located on St. Joseph Island opposite the south end of Campement d'Ours Island, is 175 feet (53^m3) long with a depth of 10 feet (3^m0) at the outer end.

Portlock Harbour is the name given to the water, almost hidden to a vessel proceeding through St. Joseph Channel, by **Portlock** and **Dawson Islands**, separated from each other by a narrow boat channel. Vessels of light 45 draught can enter Portlock Harbour from the west by passing north of Dawson Island, but the main channel is northwestward of Piercy Rocks and **Colby Island**. By this passage, a vessel can carry in 18 feet (5^m5) (at low stages there may be 4 feet (1^m2) less), and can make fast to the northeast side of **Belford Island** nearly a mile from Piercy Rocks, or anchor in 4 fathoms (7^m3) between 50 that island and **Dunlevie Point**.

Chart 2288.

A vessel drawing 14 feet (4^m3) (at low stages there may be 4 feet (1^m2) less) can proceed as far as **Wurtele Point** of Dawson Island by passing between **Pine Rock** and Dunlevie Point, and on either side of Hat Island, but as the channel between the banks is narrow, she should proceed slowly and keep the lead going. There is no village at Portlock Harbour, but vessels occasionally proceed thither to load pulpwood. Portlock Station of the Sault Ste. Marie branch of the Canadian Pacific Railway is situated a quarter of a mile from the northern shore. 5

Beacons.—A white and black beacon stands on the most easterly Piercy Rock. There is a similar beacon on the eastern tip of Colby Island, and a red and white beacon on Woodman Point. 10

Buoy.—A red spar buoy is moored on the edge of the 3-fathom (5^m5) bank, close southward of Shenick Reef, and about 2 cables northwestward of Woodman Point. 15

Directions to Portlock Anchorage.—If from the east, when approaching Gravel Point, look out for the entrance to the harbour $1\frac{1}{4}$ miles westward of One Tree Island, and when Woodman Point, the east entrance point, on which stands a red and white beacon, touches the west side of the northeastern Piercy Rock, bearing 327°, keep them so ahead, which range will lead between Beer and Ten Rib Rocks. Pass 40 or 50 yards (36^m6 or 45^m7) northeastward of the Piercy Rock Group (the two small ones are steep-to), and proceed in mid-channel to Belford Island or anchor as before directed. 20

Approaching Portlock Anchorage from the west; from the intersection of the Walker and Birch Islands leading marks (pages 371 and 379), steer for Piercy Rocks, bearing 073°. Pass 50 yards (45^m7) south and northeast of them, and thence as before directed. 25

Carmona Rock, with 10 feet (3^m0) on it (in low stages there may be 4 feet (1^m2) less), is an awkward obstruction lying northward, a quarter of a mile from West Sister lighthouse. 30

Buoy.—The west side of Carmona Rock is marked by a red and black horizontally-striped spar buoy as a middle ground, but the track used is westward of the buoy, and between it and the 13-foot (4^m0) rock next mentioned.

A rock, with 13 feet (4^m0) over it, lies over a third of a mile northwestward from West Sister lighthouse, and 350 yards (320^m0) westward from Carmona Rock. 35

Campement d'Ours Island is $1\frac{3}{4}$ miles in diameter, and separated from St. Joseph Island by a channel across which the highway is carried by a gravel fill and short bridge.

Agate Island, 44 feet (13^m4) high, lies 300 yards (274^m3) off the northeast side of Campement d'Ours Island and is distant two-thirds of a mile northwestward from West Sister lighthouse. The ship's track is close to the east and north sides of this island, on account of a rock with 7 feet (2^m1) of water over it, lying 300 yards (274^m3) northeasterly from the north point of Agate Island. 40

Buoy.—A red spar buoy marks this 7-foot (2^m1) rock. 45

Beacon.—There is a white beacon on the northeast side of Agate Island.

Chart 2288.

Graveyard Point is made prominent by a low neck joining it to the higher land of Campement d'Ours Island; it should receive a berth of 100 yards (91^m4) on account of a rock, which lies half that distance from its northwest extremity.

5 The remainder of Campement d'Ours Island westward of Graveyard Point is bold.

A large summer residence, located on the highest point of its northern extremity, makes Graveyard Point conspicuous.

10 There are a string of small bare islands on the north side of the track, extending from the west side of Portlock Island to abreast of Graveyard Point, the nearest one to the track being **Jermyn Rock**, 17 feet (5^m2) high, lying nearly a quarter of a mile northwestward from the north point of Agate Island.

Beacon.—There is a white beacon on Jermyn Rock.

15 **Boswell Island** (Lat. 46° 19' N., Long. 83° 55' W.), 25 feet (7^m6) high, is situated nearly a third of a mile north of Agate Island, and deserves mention as being a rear leading mark for crossing Plummer Bank.

20 **Walker Island**, 79 feet (24^m1) high at its eastern end, though not near the ship's track, is of importance as having a prominent summit used as part of a leading mark for passing Plummer Bank. A quarter of a mile southeastward of Walker Island, a vessel will find good anchorage in 4 to 6 fathoms (7^m3 to 11^m0), clay.

25 **Picture Island**, 67 feet (20^m4) high, is on the south side of the channel, and is the next large island westward of Campement d'Ours Island. It derives its name from a couple of white patches resembling an Indian and squaw with snow-shoes over their shoulders; its northern, eastern and southern sides are steep-to.

Walker River is situated on the mainland side of St. Joseph Channel; its mouth, bearing 343°, distant 2½ miles from West Sister Rock lighthouse.

30 **Desbarats**, a village and station on the Sault Ste. Marie branch of the Canadian Pacific Railway, is located on the Walker River about 1½ miles from the mouth. The channel to the village has been dredged 50 feet (15^m2) wide to a depth of 9 feet (2^m7). The Government wharf, 180 feet (54^m9) long, is near the station and close to the main highway. In front of the wharf is a turning basin, 240 feet (73^m2) long and 80 feet (24^m4) wide, dredged to the same depth as the channel.

35 Kensington Point is located on the north side of the channel opposite Campement d'Ours Island and mid-way between Walker Island and Killaly Point. There is a Government wharf 150 feet (45^m7) long extending to a depth of 22 feet (6^m7).

40 **Ferry.**—A cable ferry connects Kensington Point with Campement d'Ours Island and St. Joseph Island. The Kensington Point landing is at a small wharf located 500 feet (152^m4) northeast of the public wharf.

45 **Killaly Point**, 83 feet (25^m3) high, is on the north or mainland shore opposite Picture Island, the passage here being 200 yards (182^m9) with as much as 34 fathoms (62^m2) of water in one place. The southeast extremity of Killaly Point is low and grassy, but the middle portion is steep with broken stones on its slope.

50 For nearly one mile westward of Picture Island, the channel is bound on the south by a string of islands with narrow gaps between them, the most remarkable of which is **Devils Gap** between **Copper** and **Devils Islands**; vessels formerly passed through this gap but on account of a rock, with 9 feet (2^m7) of water on it, lying in the middle of its narrow channel, it has been abandoned.

Chart 2288.

Wilson Channel.—This passage is between **Wilson Island** (the western of the string of islands above mentioned) and the steep, cliffy mainland shore, and 5 fathoms (9^m1) may be carried through. (See plan, chart 2288.)

Leading lights.—Two *fixed white* leading lights are exhibited for Wilson Channel. The front light is exhibited, at an elevation of 58 feet (17^m7), from a white, square tower with red lantern, on the mainland shore and opposite the northwest end of Wilson Island; the rear light is exhibited, at an elevation of 109 feet (33^m2), from a similar structure, 730 feet (222^m5), 053° from the front light. These lights lead from Richards Landing to Wilson Channel. 5 10

Wilson Island Crib.—**Buoy.**—A reef extends 100 yards (91^m4) westward from the northwest end of Wilson Island, and the greater portion has been covered up by a crib, on the north side of which a vessel may make fast, if overtaken by darkness. About 30 yards (27^m4) of the reef still project beyond the cribwork, being marked by a black spar buoy. 15

Reef.—**Buoy.**—From a point on the main shore situated 350 yards (320^m0) westward of the front leading light, a reef extends 100 yards (91^m4); a red spar buoy marks its southern end.

A rock, with 18 feet (5^m5) of water on it, lies 80 yards (73^m2) northwestward from the end of Wilson Island crib, and as at low stages there may be 4 feet (1^m2) less water, it is avoided by keeping close to the black spar buoy off Wilson Island crib. 20

Shoal.—**Buoy.**—A shoal, with a depth of 9 feet (2^m7) over it, is situated 500 yards (457^m2) eastward of the front light of Wilson Channel leading lights and a 125 feet (38^m1) offshore. A red spar buoy marks the shoal. No vessel should pass within 50 feet (15^m2) of the buoy. 25

Bamford Island, 16 feet (4^m9) high, is the southeastern small islet of a group on the northwest side of the passage and is situated two-thirds of a mile southwest from Wilson Channel front leading light. An unlighted tower was standing in 1933. A reef extends south from the south point of Bamford Island 200 yards (182^m9), where the depth is 18 feet (5^m5), and a reef extends 150 yards (137^m2) in the same direction from the south point of the island next west of Bamford Island, where the depth is 15 feet (4^m6). The former of these reefs is marked by a red spar buoy. 30

Buoy.—Two rocks, with 2 feet (0^m6) and 3 feet (0^m9) of water on them, lie, respectively, southeast 150 yards (137^m2), and east 300 yards (274^m3) from Bamford Island, the former being marked by a black can buoy. 35

A red spar buoy marks the northwest side of the channel at this point, moored about 50 feet (15^m2) from the line of lights. The range should not be opened the slightest degree to northward when passing between these two buoys. 40

A cable southward of Bamford Island the channel is marked by a red spar and a black spar buoy.

Port Finlay is the name given to the wharf on the mainland situated 1·1 miles westward of Bamford Island, but as it is beset by shoals, no vessel should approach it without local knowledge. The wharf, L-shaped, is 135 feet (41^m1) in length and 80 feet (24^m4) wide across the outer end. The depth alongside is 18 feet (5^m5). 45

Buoy.—A red spar buoy is moored just eastward from Port Finlay wharf.

Chart 2288.

Chicora Shoal is the largest of the many dangers lying off Port Finlay, its shoalest part, with 6 feet (1^m8) of water on it, lying a little over three-quarters of a mile northeast from Richards Landing.

- 5 **Buoys.**—Chicora Shoal is marked by a red spar buoy moored south of it, and another red spar buoy marks the southeast side of a 10-foot (4^m9) spot lying 400 yards (365^m8) east of the shallow part of Chicora Shoal.

- 10 **Shoals.**—**Buoys.**—A small shoal of boulders, with 13 feet (4^m0) over it, and marked by a spar buoy painted in red and black horizontal bands, lies 450 feet (137^m2) south of the south point of Chicora Shoal. A shoal, about 100 feet (30^m5) in diameter with a least depth of 13 feet (4^m0) over it, and marked by a red spar buoy, lies 2,300 feet (701^m0), 016° from Richards Landing lighthouse.

Caution.—At low stages there would be 4 feet (1^m2) less on these shoals.

- 15 **Humbug Point**, on St. Joseph Island, is situated over a third of a mile south of Bamford Island. It is high and partly wooded.

McKinnon Rock (Lat. 46° 19' N., Long. 84° 00' W.), with 9 feet (2^m7) of water on it, lies over a third of a mile westward from Humbug Point, and 200 yards (182^m9) southeastward of the line of Wilson Channel leading lights.

- 20 **Rosseau Island**, about 20 feet (6^m1) high and partly wooded, is situated nearly midway between Humbug Point and Richards Landing, and is separated from the coast of St. Joseph Island by a shallow boat channel.

Rosseau Shoal, with 2 feet (0^m6) of water on it, lies 250 yards (228^m6) northward of the island of that name, and 250 yards (228^m6) southeastward of the line of the leading lights.

- 25 **Richards Landing** is a small village and wharf on St. Joseph Island, situated in the southern part of the portion of the channel called **Bear Lake**; there is frequent steamer connection with Sault Ste Marie, Owen Sound and the ports between. There is a depth of 18 feet (5^m5) at the wharf, the immediate approach to which is free from danger; the face of the wharf is 180 feet (54^m9) in length.

Light.—A *fixed green* light is exhibited, at an elevation, of 16 feet (4^m9), from a lantern on the roof of the wharf warehouse, at Richards Landing.

- 35 The coast of St. Joseph Island, from Richards Landing to **Boulanger Point**, distant 2.1 miles in a northwesterly direction, takes the shape of a large bay, off the shore of which a flat under the depth of 18 feet (5^m5) extends an average distance of two-thirds of a mile.

Leonard Reef, 3 feet (0^m9) high, composed of boulders with a few bushes growing between them, is situated in the northwestern portion of this bay, and a little over half a mile southeastward from Boulanger Point.

- 40 **Shoal Island** is separated from Boulanger Point of St. Joseph Island by a channel 200 yards (182^m9) wide, through which it is possible to carry 13 feet (4^m0) of water, but on account of the sunken rocks in it, and the better passage north-eastward of Shoal Island, it is not to be recommended. Shoal Island, 200 yards (182^m9) from its northwest extremity, is divided by a narrow gut.

- 45 Rocks, dry and sunken, extend nearly 100 yards (91^m4) off the northeast side of Shoal Island, and close to them the water is deep.

Chart 2288.

Light.—A *fixed white* light is exhibited, at an elevation of 32 feet (9^m8), from a white, square building on the northern extremity of Shoal Island.

A rock, with 12 feet (3^m7) of water over it (at low stages there may be 4 feet (1^m2) less), lies 70 yards (64^m0) north from the lighthouse, the ship's track passing 5 between them.

Buoys.—A red spar buoy marks the south side of the 12-foot (3^m7) rock above described, and a black spar buoy is moored northeast of the lighthouse on the northeastern edge of the shallow water of Shoal Island.

Horse Island, 42 feet (12^m8) high, is the southern large island of the group 10 lying northward of Shoal Island lighthouse and almost filling the mouth of the extensive shallow bight known as **Maskinonge Bay**. Horse Island is nearly 2 $\frac{1}{4}$ miles westward of Port Finlay, the intervening shore being fronted by numerous dry stones and sunken rocks.

A rock, with 7 feet (2^m1) on it, lies 150 yards (137^m2) south from the south 15 point of Horse Island.

A rock, with 15 feet (4^m6) of water over it, lies 169°, 400 yards (365^m8) from the south point of Horse Island.

Buoy.—A red conical buoy marks the south side of this rock.

Wabuno Bank is a dangerous rocky ledge, with depths on it varying from 20 a few inches to 9 feet (2^m7), lying 200 yards (182^m9) northward of Shoal Island lighthouse.

Empire Ledge, with one foot (0^m3) of water on its shoalest part, is situated with its southeast extremity almost joining Wabuno Bank, and northeastward of the ship's track. These two ledges, together with 12-foot (3^m7) spot, mentioned 25 above, off the lighthouse, render this portion of St. Joseph Channel the most difficult to navigate, made worse by the strong current out of St. Marys River.

Buoy.—A red spar buoy marks the southern edge of this ledge.

Ferry.—A cable ferry operates between Boulanger Point and Great Maskinonge Island. From this island a gravel fill and short bridge connects 30 with the highway on the mainland to Sault Ste. Marie.

From Boulanger Point, the coast of the northwest extremity of St. Joseph Island trends in a general westerly direction 1 $\frac{3}{4}$ miles to **Stribling Point**, when it abruptly turns southward forming the eastern shore of Munuscong Channel, St. Marys River (*see* page 391). 35

Leading lights.—Two *fixed white* leading lights are exhibited on Stribling Point. The front light is exhibited, at an elevation of 27 feet (8^m2), from a white tower on the foreshore at Stribling Point; the rear light is exhibited, at an elevation of 54 feet (16^m5), from a steel tower with white daymark, 2,155 feet 40 (656^m8), 112° from the front light.

These lights in line lead through Middle Neebish Channel.

Cambria Bank, with 10 feet (3^m0) of water on it (at low stages there may be 4 feet (1^m2) less), extends a little more than a third of a mile northward from the coast, half a mile eastward of Stribling Point.

Light-buoy.—In 4 fathoms (7^m3) of water north of Cambria Bank and 1,000 45 yards (914^m4), 073° from Harwood Point, Sugar Island, is moored a light-buoy, painted black, showing a *flashing white* light.

Chart 2288.

A red and black horizontally-striped spar buoy is moored a third of a mile, 304°, from Stribling Point front leading light, and a red conical buoy lies between it and the same light. Running between St. Joseph Channel and St. Marys River, vessels must pass between these two buoys.

Leading lights.—Two *red* leading lights are exhibited on the northeast coast of Neebish Island. They are known as the **Hen and Chickens** and are United States lights.

The front *flashing red* light is exhibited, at an elevation of 16 feet (4^m9), from a mast with white, diamond-shaped daymark, on Hen Island; the rear *occulting red* light, is exhibited, at an elevation of 27 feet (8^m2), from a pyramidal tower with white, diamond-shaped daymark, 400 yards (365^m8), 231° from the front light. These lights in line lead through the channel between Sugar and St. Joseph Island.

Harwood Point (Lat. 46° 19' N., Long. 84° 07' W.) is the name given to the southeast extremity of Sugar Island (United States), distant half a mile from Stribling Point, and between them the buoyed channel has been dredged to a depth of 12 feet (3^m7) at 578·5 feet above mean tide at New York.

Leading lights are shown on Harwood Point, *see* page 391.

East Neebish Island, 2 miles long in a northwest direction, belongs to Canada, and is situated a quarter of a mile eastward of the southern part of Sugar Island, the portion of St. Marys River between them being known as East Neebish Channel.

The northern coast of East Neebish Island is divided from the mainland of Canada by a shallow boat channel, whilst eastward from the island runs in a long bay from St. Joseph Channel affording, in its southern part, excellent anchorage in 16 to 18 feet (4^m9 to 5^m5) clay bottom. The bay is separated from Maskinonge Bay by a narrow peninsula called **Long Point**.

Rains wharf and barns are situated on the east coast of Sugar Island nearly a mile northward of Harwood Point, and are used as a leading mark (*see* page 379). The United States Government has a lighthouse depot here.

Thorne Island, 65 feet (19^m8) high, **Iron** and **Gaffney Islands** lie in the bight formed under the southern portion of East Neebish Island; East Neebish Channel runs between these three islands and Sugar Island.

Atlantic Rock, with 6 feet (1^m8) of water on it, is an isolated spot situated a third of a mile southeastward from Thorne Island and 125 yards (114^m3) north of the vessel's track.

Merida Shoal, with 13 feet (4^m0) of water over it, lies 350 yards (320^m0) southward from the same island and about the same distance northwest of Atlantic Rock.

Buoy.—A red spar buoy marks the west side of Merida Shoal, and is 100 yards (91^m4) northeast of the centre of the channel.

Anchorage.—A vessel having to anchor will find a good berth between Thorne and the western of the two islands forming the southern extremity of East Neebish Island, in 3 to 4 fathoms (5^m5 to 7^m3), mud, taking care to avoid Merida Shoal and Atlantic Rock, which she should pass eastward of.

(For brief description of Lake George, *see* page 398).

Chart 2288.

Directions for St. Joseph Channel.—Between Cedar Island and Canoe Point of St. Joseph Island distant from each other 10 ($8\frac{3}{4}$ nautical) miles, the coast of the latter is steep-to, in marked contrast to that of the mainland, and a vessel proceeding right through St. Joseph Channel should not approach the mainland shore nearer than the line of the south point of Birch Island touching the north points of Calf and Cedar Islands, bearing 106° . 5

Proceeding northwestward, when the outer end of the landing jetty at West Sister lighthouse comes in line with the beacon on the summit on the east end of Walker Island, bearing 336° , or the lighthouse itself is in line with the top (marked by a small stone hut in 1914) of Boswell Island, bearing 340° , either range may be kept, and Plummer Bank crossed between the red light and the black spar buoy. As a deep-draught vessel will not have much water to spare, she should proceed slowly and keep the lead going here. 10

Continue on between South Sister Rock and West Sister lighthouse, passing southwest of Carmona Rock striped-buoy, close northeast of Agate Island, whence the southern shore of the channel must be kept fairly close on board, except when off Graveyard Point, until the narrows of Wilson Channel are reached. Pass now between the black spar and the red spar buoys, bringing the two leading lights on the bluff in line astern, bearing 053° , and Richards Landing a very little on the starboard bow, which will lead southeast of the two red spar buoys, marking the reefs from Bamford Island, and northwest of the two black spar buoys. A vessel of heavy draught should slow down here also. 15 20

Proceed on the lighthouse range, which leads southeast of the red spar buoy marking Chicora Shoal and also of the red and black horizontal-striped buoy moored on the 13-foot (4^m0) spot three-quarters of a cable southward of it. Passing the latter, a vessel should haul gradually westward, leaving the red spar buoy moored northward of Richards Landing about one cable to starboard and bring Shoal Island lighthouse ahead and that at Richards Landing astern. The former should be seen in line with Rains barn near the United States lighthouse depot on Sugar Island, bearing 305° , and this track should lead southwest of the red conical buoy moored southward of Horse Island. 25 30

Haul carefully and slowly round Shoal Island light, passing between the black spar and the red spar buoy marking the narrow and awkward turn in the channel, in which the current is strong. Now keep westward for 200 yards (182^m9) and then steer 303° , with the United States lighthouse depot about half a point on the starboard, and Cambria Bank black light-buoy a little on the port bow, passing southwest of Empire Ledge red spar buoy. 35

(For directions to Sault Ste. Marie, see next chapter.)

CHAPTER XII

ST. MARYS RIVER and POTAGANNISSING BAY

DATUM.—See page 1.

Note.—The information contained in this chapter is derived from the latest charts and sailing directions published by the Government of the United States:—

U.S. Charts 61, 62.

St. Marys River.—From Point Detour lighthouse to the entrance to the canals at Sault Ste. Marie by the ship channel, the distance is 48 (42 nautical) miles. For the southern 23 miles, the natural channel between the shallow banks is nowhere less than a third of a mile wide, and, generally, much wider.

At $1\frac{1}{2}$ miles southeast of Winter Point, the south extremity of Neebish Island, the broad channel ceases, and, thence to the canals, channels have been dredged with a least width of 300 feet (91^m4) and depth of $24\frac{1}{2}$ feet (7^m1) for downbound traffic, and width of 500 feet (152^m4) and depth of 21 feet (6^m4) for upbound traffic.

At the above position southeast of Winter Point, the hitherto broad channel divides into two, that for upbound vessels, between Neebish Island and St. Joseph Island taking the name of Munuscong Channel, while its continuation between the north coast of Neebish Island and the southern part of Sugar Island is named Middle Neebish Channel. At the junction of these two stretches, there is a passage between the northwest extremity of St. Joseph and the southeast point of Sugar Island, connecting with the Canadian water of St. Joseph Channel (pages 369–378), and also with the common water of Lake George, for a brief description of which see page 398.

The passage westward of Neebish Island, known as West Neebish Channel, is exclusively for downbound vessels.

In Lake Nicolet, near Nine Mile Point (*Lat.* $46^{\circ} 24' N.$, *Long.* $84^{\circ} 14' W.$), the channels for upbound and downbound vessels unite, and so continue with a minimum width of 600 feet (182^m9) to the canals, the upbound vessels passing northeastward of those bound down.

The water $4\frac{1}{2}$ miles wide between Drummond and St. Joseph Islands, containing many islands with passages between them, is known as **Potagannissing Bay**, the greater part of which belongs to the United States. A brief description of this bay is given on pages 383–387.

Regulations.—Speed.—Vessels of 500 gross tons or over shall at no time exceed a speed of 12 statute miles per hour through any portion of the St. Marys River between Everens Point and Big Point.

Vessels of 50 gross tons or over shall at no time exceed a speed of 10 statute miles per hour in the Middle Neebish Dike Cut, the West Neebish Rock Cut, or the Sailors Encampment Channel below Johnson Point.

Upbound and downbound.—Navigation in the vicinity of Pipe Island shall be by the right-hand channel—upbound vessels passing to the eastward and downbound vessels passing to the westward of Pipe Island. All vessels

U.S. Charts 61, 62.

upbound to Sault Ste. Marie pass eastward of Neebish Island; those downbound to Detour Passage, or North Channel of Lake Huron by Potagannissing Bay, pass west of the same. Vessels from Sault Ste. Marie to St. Joseph Channel may use Middle Neebish Channel northeast of Neebish Island.

5

Notice of approach.—In passing through Middle Neebish Channel, a downbound vessel shall sound one blast of at least 8 seconds on her whistle, when abreast of Coyle Point, and an upbound vessel shall sound the same signal abreast Everens Point.

For complete rules for the navigation of St. Marys River, the master of a vessel should apply to the United States Survey Office, Detroit, for the latest "Great Lakes Pilot".

10

Buoyage and lighting.—As a rule, the light-buoys and light beacons (when not ranges) on port hand, upbound, are painted black and show *flashing white* lights; those on the starboard hand are painted red, and exhibit *flashing red* lights. The leading lights are, with certain exceptions, *fixed white*.

15

Navigation season.—St. Marys River is usually free of ice from the last week in April until the first week in December.

Chart 2295.

Detour Passage, separating Drummond Island from the mainland of Michigan, is a little over three-quarters of a mile wide, and $4\frac{2}{3}$ miles long from Detour Reef lighthouse to Pipe Island lighthouse.

20

Detour Shoal, with 4 feet (1^m2) of water on it, lies a quarter of a mile northeast from the northeast side of Point Detour.

Buoy.—A black can buoy marks the east side of this shoal.

25

(For Point Detour light and Detour Reef, see Chapter III, page 62.)

Ship Channels.—In Detour Passage the routes for upbound and downbound traffic separate; the course for upbound traffic passes to the east of Pipe Island and that for downbound to the southwest of the island; both courses are in deep water.

30

Frying Pan Island.—The western shore of the passage, from Point Detour to Frying Pan Island, is bordered by rocks and shoals extending off a quarter of a mile. The island lies abreast the southern part of the town of Detour, distant from the shore nearly a quarter of a mile. A patch, with 18 feet (5^m5) of water over it, lies 700 yards (641^m0) southward from Frying Pan Island.

35

Lights.—**Fog signal.**—Two *flashing green* lights are exhibited at, elevations of 20 feet (6^m1), from white, skeleton towers, on the upper and lower ends, respectively, of the coal dock (disused) at the south end of Frying Pan Island.

A fog siren, sounding one blast every 30 seconds, is sounded from the upper light.

40

Storm signals are exhibited at Detour from a steel tower on Dawson Street about 500 feet (152^m4) from the river-front.

Buoy.—A red nun buoy is moored approximately 3,400 feet (1,046^m3), 122°, from Frying Pan Island light, to mark the edge of shoal water for vessels approaching the stone dock on Drummond Island.

45

Chart 2295.

Gaffney Point lies nearly 2 miles northwestward from Frying Pan Island, and from the coast between project several wharves; the point is abreast Pipe Island distant half a mile.

- 5 **Pipe Island** is conspicuously situated at the north end of Detour Passage, 2 miles north of Frying Pan Island. It is 400 yards (365^m8) long, north and south, by 300 yards (274^m3) in maximum width.

Light.—A *group flashing red* light is exhibited, at an elevation of 52 feet (15^m8), from a yellow, octagonal tower with skeleton superstructure, on the 10 south side of Pipe Island. A *fixed red* sector, visible from 353° to 355°, marks the turning point off Watson Reefs.

Buoy.—A red conical buoy is moored, 490 feet (149^m4) southwestward of Pipe Island lighthouse, on the edge of the channel.

- 15 **Pipe Island Twins.**—From the north side of Pipe Island, a shallow bank extends five-eighths of a mile, where are situated two islets, 400 yards (365^m8) apart, known as Pipe Island Twins.

Buoy.—A black can buoy is moored on the northeast corner of the shoal making out from Pipe Island Twins. It is fitted with a radar reflector.

- 20 **Light.**—On the northeast side of the east Pipe Island Twin is erected a black, pyramidal, steel skeleton tower, with tank house in base, which, from a height of 26 feet (7^m9), exhibits a *white light flashing every 2½ seconds*.

- 25 **Pipe Island Shoal**, consisting of two rocky patches with 11 and 12 feet (3^m4 and 3^m7) over them, lie over half a mile southeast of Pipe Island lighthouse, and are marked by a black conical light-buoy, showing a *flashing white light every 4 seconds*, moored in 20 feet (6^m1) of water, southward of the southern patch.

Watson Reefs are five small detached patches lying between **Sims lock** and Gaffney Point; the shoalest has but 2 feet (0^m6) of water on it, with deeper water between it and Watson coal wharf.

- 30 **Light-buoy.**—A black conical light-buoy, showing a *flashing green light every 4 seconds*, is moored in 30 feet (9^m1) of water on the west side of the vessel's track abreast the centre of the reefs. In addition to this, other buoys and float lights are privately maintained.

- 35 **Sweets Point** (Lat. 46° 02' N., Long. 83° 56' W.)—From Gaffney Point, the main shore trends northwestward nearly 2 miles to Sweets Point, close off which are two small islets known as **Sweets Islands**. A shoal called Sweets Point Shoal extends nearly half a mile northward of the point.

- 40 **Light.**—**Fog signal.**—A *flashing green* light is exhibited, at an elevation of 44 feet (13^m4), from a white, skeleton tower near the northern edge of Sweets Point Shoal.

A fog bell sounds *one stroke every 15 seconds*.

The northern edge of the shoal is marked by a black can buoy

Squaw Island lies about 1½ miles northward of Pipe Island.

- 45 **Light.**—A *flashing red* light is exhibited, at an elevation of 26 feet (7^m9), from a red, skeleton tower, on the southern extremity of Squaw Island.

(For ship channel northwest of Sweets Point, see page 387.)

Chart 2295.

Barbed Point of Drummond Island, alluded to together with Crab Island and its shoal in Chapter III, page 62, is situated nearly $1\frac{1}{2}$ miles northeastward from the nearest part of Point Detour.

A few small islands lie at the mouth of the first indentation, two-thirds of a mile north of Barbed Point, the largest being one-quarter of a mile offshore. Otherwise the coast is steep-to as far as **Black Rock Point** which is situated $3\frac{1}{4}$ miles northeastward from Barbed Point. 5

From Black Rock Point, the western coast of Drummond Island trends $1\frac{1}{2}$ miles northeastward to **Dix (Sims) Point** from which a shallow bank makes out one-third of a mile westward; otherwise the coast is clean. 10

Arrow Island, small and narrow, lies one mile eastward from Dix Point.

Surveyors Island lies also eastward, one mile from Dix Point and is separated from Arrow Island by a narrow channel.

Bow Island, one-third of a mile long and narrow, lies with its southern point one mile northeast from Dix Point. 15

An 18-foot (5^m5) patch is situated nearly half a mile northeastward from the north end of the island.

Submerged net stakes lie between Bow and Surveyors Islands.

Little Trout Island lies $1\frac{1}{4}$ miles northward from Dix Point. Midway between this island and Bow Island is a shoal, with 6 feet (1^m8) on it, and from the north of Little Trout Island, a bank, with depth of 13 feet (4^m0), extends one-third of a mile in a northeast direction. 20

Bacon Island, small and narrow, lies nearly one mile east from Big Trout Island (*see* page 387) and the same distance northeastward from Little Trout Island. 25

Bacon Shoal, with $1\frac{1}{2}$ feet (0^m4) of water over it, lies a quarter of a mile northwest from the northeast extreme of Bacon Island; a patch, with 6 feet (1^m8) of water over it, lies two-thirds of a mile southeast from Bacon Island.

Drummond Village is situated 5 miles eastward from Dix Point, and between them runs in for a distance of 3 miles **Sturgeon Bay**, containing many islets and scattered shallow patches. At the village is a dock with 12 to 14 feet (3^m7 to 4^m3) of water. 30

Potagannissing River, which empties in the eastern part of the bay of this name, is situated 4 miles in an easterly direction from Drummond village. The coast between is fronted by a group of some 23 islands, small and large, between which the passages are only suitable for light-draught craft; only the largest and the nearest to the vessels' track will be described. 35

Harbour Island, the largest of the group above mentioned, is approximately $1\frac{1}{2}$ miles square, 100 feet (30^m5) high and is situated with its south side $1\frac{1}{2}$ miles northward of Drummond village. The island contains a boat harbour with narrow entrance on its south side. 40

Gull Island, three-eighths of a mile long, lies with its northern extremity half a mile southward from Harbour Island Reef, $1\frac{3}{8}$ miles eastward from the north end of Surveyors Island and one mile southwestward from the southwest extremity of Harbour Island. 45

Chart 2295.

Harbour Island Reef, a small dry reef, lies on the southern end of a rocky bank, half a mile long, almost parallel to and situated half a mile westward from the westernmost part of the coast of Harbour Island.

- 5 **Saltonstall Island**, three-eighths of a mile long north and south, lies with its north point 350 yards (320^m0) west of the south end of Mare Island and nearly 1½ miles eastward of Bacon Island. A 9-foot (2^m1) rocky patch lies one-third of a mile southward from Saltonstall Island.

- 10 **Mare Island** small and narrow, lies westward 1¼ miles from the northwest end of Harbour Island. This island, as well as Saltonstall Island, is fairly steep-to. Submerged net stakes lie north of Saltonstall Island and west of Mare Island.

- 15 **Standerson Island**, three-eighths of a mile long, lies with its southern extremity about half a mile westward from the northwest point of Harbour Island. A shoal spit, with 13 feet (4^m0) of water over it, makes out three-eighths of a mile southwesterly from the western side and another spit, with 17 feet (5^m2) of water over it, the same distance northeastward from the east side of the island.

- 20 **Propeller Island**, quite small, lies nearly one mile north from the northern extreme of Harbour Island.

- A bank, with 8 feet (2^m4) on it, extends over half a mile westward from Propeller Island, and a rock with 2 feet (0^m6), lies over a third of a mile eastward of the same island. A shallow spit, with rocks nearly dry, extends 350 yards (320^m0) north, and a 9-foot (2^m7) rocky patch lies 750 yards (685^m8) in the same direction from the island.

Another patch, with 17 feet (5^m2) of water over it, lies half a mile northeastward from same island.

- 30 **Coast.**—From the mouth of Potagannissing River, the shore trends irregularly northward 2½ miles, and then abruptly alters its direction to about northwest for 3¼ miles, to **Bruce Point**, whence the shore trends northeast one mile to **Chippewa Point**, for description of which see Chap. XI, page 355. The whole bight between Potagannissing River and Bruce Point is fit for small craft only.

- 35 **Cherry Island** (Lat. 46° 05' N., Long. 83° 45' W.) lies over 440 yards (402^m3) northeastward from Cedar Island and on a bank extending from it. The east side of Cherry Island can be approached to within 200 yards (182^m9).

Cedar Island, about three-eighths of a mile in diameter, lies a little over 1½ miles west from Bruce Point and the vessels' track passes between them.

- 40 Submerged net stakes, with 12 feet (3^m7) over their upper ends, lie west of Propeller and south of Cedar Islands.

Twin Sister Island lies about one-quarter of a mile south of the southeastern extremity of Wilson Island and 1½ miles westward from Propeller Island.

- 45 **Long Island**, a third of a mile long northeasterly, lies in that direction 1¼ miles from Bacon Island. Southward of the line joining Long and Cedar Islands are numerous submerged fishing net stakes, the tops of which, a few feet below the surface, are dangerous to navigation.

Wilson Island, one mile long northwest and southeast by half a mile maximum width, lies northwestward from Cedar Island with a channel one-quarter of a mile wide dividing them.

Chart 2295.

Burnt Island is the largest of a group of twelve islands belonging to the United States and lying in the middle of the entrance to Potagannissing Bay from North Channel. Together with Cherry, Cedar, Twin Sister, and Wilson Islands it lies on an extensive bank of shallow water. Burnt Island is over $1\frac{1}{2}$ miles long east and west and indented by bays; it is situated northwestward from Wilson Island, being separated from it by a very narrow channel. 5

Claw and Harris Islands are two small islands, 200 yards (182^m9) apart, and lying south of, and close to, the eastern end of Burnt Island.

Norris and Spence Islands, small and narrow, lie close to the western side of Burnt Island. 10

Burnt Island Reef, a dry reef closely surrounded by deep water, lies three-quarters of a mile westward from the northernmost point of the island of the same name.

Light-buoy.—A black light-buoy, showing a *flashing white* light, marks an 18-foot (5^m5) shoal one-half mile northward of Burnt Island Reef. 15

North Seine Island is the northern of the Burnt Island group, being joined to South Seine Island by a very narrow isthmus. Both islands are narrow, are together one mile long, and lie, with the southern point of **South Seine Island**, one mile northeastward from the northeast point of Burnt Island. Shallow water extends northward from the north point of North Seine Island 150 yards (137^m2), its east and west sides being steep-to; both these islands, together with Maple Island southeast of them, belong to Canada. 20

Light-buoy.—A black light-buoy, showing a *flashing white* light, is moored on the north extreme of the bank making out from North Seine Island, opposite the red light-buoy on Colville Bank (see page 368). 25

Maple Island, half a mile long north and south, lies with its western extremity half a mile east of the southern end of South Seine Island.

A rock, with less than 6 feet (1^m8) of water over it, lies on the line joining Cherry and Maple Islands and is distant three-quarters of a mile from Cherry Island. 30

Besides being a danger to navigation, this rock is important as marking turning point No. 222 of the International Boundary.

Salt Island, also belonging to Canada, is small and has good water about it; it lies one mile westward from the north point of North Seine Island and three-quarters of a mile southeastward of Koshkawong Point of St. Joseph Island. A black spar buoy is moored $2\frac{1}{2}$ cables northward of it. 35

Koshkawong Point is the southwest entrance point of Milford Haven, which together with the group of islands extending to Perrique Island, $2\frac{1}{2}$ miles eastward of it, are described in Chapter XI, page 367. 40

Light.—From a steel superstructure, displaying a white and red daymark, on Koshkawong Point, a *flashing red* light is shown, at an elevation of 14 feet (4^m3). 45

Burnt Point is situated $3\frac{3}{4}$ miles southwest from Koshkawong Point, and between them extends northwestward **Worsley Bay**, the head and narrower portion of which is called **Tenby Bay**. Shallow water extends one mile from the head of this bay.

Chart 2295.

Two rocks, with 3 and 9 feet (0^m9 and 2^m7) of water on them, lie two-thirds of a mile east and northeast, respectively, from **Whitman Point**, the southwest entrance point of Tenby Bay, $1\frac{1}{2}$ miles from the head and $2\frac{3}{4}$ miles north of Burnt Point.

Immediately northward of Burnt Point is an indentation called **Sterling Bay**, on the south side of which is a small Government wharf extending to a depth of $3\frac{1}{2}$ feet (1^m0).

Old Fort St. Joe Point, the south extremity of St. Joseph Island, is situated 4 miles southwesterly from Burnt Point, the coast between being indented by several small bays, and fronted at a distance of three-quarters of a mile by four islands connected to the coast by shallow water; these four islands belong to Canada, and comprise:—

Duncan Island, half a mile long northeast and southwest, lying three-quarters of a mile southwestward from Burnt Point. Shallow water extends 300 yards (274^m3) northeastward of the island and its southeast coast is fairly steep-to.

Archibald Island lies south of Duncan Island and is separated from it by a channel 250 yards (228^m6) wide. This small island, about 300 yards (274^m3) long, lies 150 yards (137^m2) northwest of the International Boundary line.

Light.—A *flashing red* light is shown, from a steel structure displaying a white and red daymark, on the southeastern point of Archibald Island.

Buoys.—A black spar buoy, with reflector bands, marks the southeast side of the channel, opposite Archibald Island. A red conical buoy, fitted with a radar reflector, is moored on the western side of the channel northeastward of Archibald Island.

Janden Island, 750 yards (685^m8) long, lies 600 yards (548^m6) southwest from Duncan Island.

Pirate Island, the southernmost of the group of four Canadian Islands above mentioned, is small and lies $1\frac{3}{4}$ miles eastward from Old Fort St. Joe Point and half a mile southwestward from Janden Island. The east, south, and southwest sides of the island can be approached to within a distance of 250 yards (228^m6).

Light-buoy.—A red light-buoy, showing a *flashing red* light, is moored about one cable southeast of Pirate Island to mark the northern side of the channel entrance.

Macomb Island, over three-quarters of a mile long, is the largest of a group of seven islands, belonging to the United States and separated from the above group of four by a channel with depth of 4 to 6 fathoms (7^m3 to 11^m0). It lies one mile southeastward from Burnt Point, and its north coast is steep-to. A light-buoy marks the northwest angle of the shoal west of Macomb Island.

Maple Island, the next largest of the group, lies southeastward from Macomb Island being separated from it by a channel 300 yards (274^m3) least width. The north, east, and south coasts are steep-to.

Butterfield Island, half a mile long northwest and southeast but narrow, lies north of the northeast point of Macomb Island, the channel between them being about 330 yards (301^m7) wide. The coast of this island is steep-to.

U.S. Chart 61.

A rock, with 7 feet (2^m1) of water on it, lies eastward nearly one mile from Burnt Point, and over a third of a mile northward of Butterfield Island.

Big Trout Island (*Lat. 46° 03' N., Long. 83° 51' W.*), the southern of the group, lies 4 $\frac{1}{4}$ miles eastward from Old Fort St. Joe Point, 1 $\frac{3}{4}$ miles north of Dix Point and southward from Maple Island from which it is separated by a channel half a mile wide. Three-eighths of a mile northeast of its south point is a rocky shoal with a depth of only 2 feet (0^m6) on it. 5

Two patches, with 13 and 15 feet (4^m0 and 4^m6) of water over them, lie three-quarters of a mile west of the southeast extreme of Big Trout Island. 10

Cass Island, two-thirds of a mile long, lies that distance southwestward from Macomb Island, and shoal water extends 300 yards (274^m3) from its west side.

Andrews Island lies one mile westward from Big Trout Island. Its north-east, east, and south sides are steep-to. 15

Andrews Reef is a small rock, lying one quarter of a mile southwestward from Andrews Island.

Little Cass Island is small and lies over half a mile southwestward from Cass Island. There is a depth of 16 feet (4^m9) one quarter of a mile southwest from the island, which is otherwise steep-to on its western and southern sides. 20

All these islands lie on the same bank and no passage exists between them except for light-draught vessels.

Directions through Potagannissing Bay.—The track from Detour Passage to North Channel of Lake Huron laid down on U.S. Chart 61 is as follows: From Frying Pan Island, steer with the south extreme of Bacon Island in line with the northwest side of Little Trout Island, bearing 034°, until northwest of Dix Point; thence 084° for the south point of Gull Island (the southwestern of the Harbour Island group) seen between Surveyors and Bow Islands, until equidistant from Gull and Surveyors Islands. Now haul northward and steer 008° for 2 $\frac{1}{4}$ miles until the south extremity of Big Trout Island is in line with the north point of Bacon Island, bearing 249°, and Propeller Island ahead. Keep the first two islands in line astern for 2 miles, until three-quarters of a mile from the latter, when haul northward, and steer 029°, passing between the submerged net stakes on the northwest, and the dangerous bank from Propeller Island on the southeast side. 35

(*Continuation of St. Marys River*):—

Pointe aux Frênes.—From Sweets Point (*see* page 382), the shore trends 2 miles westward to a point which is the western entrance of Maud Bay nearly one mile wide and three-quarters of a mile long but shallow.

From this point the coast, fairly steep-to, trends 6 miles to a large indentation called **Raber Bay** where is located Raber village, whence it runs north-eastward 3 $\frac{1}{2}$ miles to a prominent projection 20 feet (6^m1) high, known as Pointe aux Frênes; the last stretch has a shallow bank extending from it one mile, and east of Pointe aux Frênes the 18-foot (5^m5) contour is three-eighths of a mile off. 40

Light-buoys.—The channel off Pointe aux Frênes is marked by a black light-buoy, showing a *quick flashing green* light, moored east of the point. North-east of the point is a black light-and-bell-buoy, showing a *quick flashing white* light, and a red light-buoy, showing a *flashing red light every $\frac{1}{4}$ seconds*. A red 45

U.S. Chart 61.

light-buoy, showing a *flashing red* light every 4 seconds, is moored on a 21½-foot (6^m5) spot, 2½ miles northwestward of the point. A black spar buoy is moored 1½ miles northwestward of the same point.

- 5 **Hay Point** of St. Joseph Island is situated 5½ miles northwestward from Old Fort St. Joe Point, the shore between being low and marshy; shoal water, under the name of **Hay Point Reef**, extends half a mile northwest from Hay Point.

Leading lights.—Two leading lights are exhibited on Hay Point. The 10 front light, *flashing white*, is exhibited, at an elevation of 25 feet (7^m6), from a steel, skeleton tower, with white daymark on Hay Point; the rear light, *fixed white*, is exhibited, at an elevation of 60 feet (18^m3), from a similar tower, 129¾, 1,100 feet (335^m3) from the front light.

- 15 These lights lead downbound vessels from abreast Winter Point to Lake Munuscong light-and-bell-buoy.

Buoyage.—Moored off the west edge of Hay Point Reef is a red light-buoy, showing a *flashing red* light every 4 seconds. A red spar buoy is moored three-quarters of a mile northwest of Hay Point.

- 20 **Lime Island**, with several small islands lying northeast of it, is United States territory. Lime Island is 2½ miles long, and lies abreast the stretch of coast last mentioned, being joined thereto by shallow water on which lie some small islands. The west and southwest coast of the island are steep-to. On its northwest end stands the conspicuous coal hoist and wharf of the Northwestern—Hanna Fuel Co. The wharf is 800 feet (243^m8) long with a good depth of water.

- 25 **Traffic buoy.**—A black and white vertically-striped light-buoy, showing short-long white flashes, is located one mile south of the south end of the above wharf at Lime Island; it marks the upstream junction of the separate up and down-bound courses, separating the two-way traffic at this point and should be left 30 on the port hand in passing, so as to obviate crowding upbound vessels at the turn into the foot of Lake Munuscong.

Round Island, a small island, lies midway between Lime Island and Pointe aux Frênes, and a bank, terminating in a depth of 6 feet (1^m8), extends in a southerly direction one mile from this island.

- 35 **Light.**—A *flashing white* light is exhibited, at an elevation of 29 feet (8^m8), from a black, skeleton tower on the northeast point of Round Island. A red sector shows from 001° through east to 181°.

- Buoyage.**—A red light-buoy, showing a *flashing red* light, is moored opposite the upper end of Lime Island; a black light-buoy, showing a *flashing white* light, is moored on the opposite side of the channel about 1,500 feet (457^m2) farther 40 downstream. A black spar buoy is moored abreast Round Island; a red spar buoy is moored half a mile southeastward and a similar buoy the same distance northeastward of Round Island lighthouse with a black spar buoy abreast the latter.

- 45 **Lake Munuscong** is the stretch of water from Pointe aux Frênes to Winter Point of Neebish Island.

Ship Channel.—An improved channel, extending from the head of Lime Island to 2 miles above Pointe aux Frênes, has a least depth of 25 feet (7^m6) and width of 1,200 feet (365^m8).

U.S. Chart 62.

Rocky Point (*Lat. 46° 11' N., Long. 84° 07' W.*).—From Pointe aux Frênes, the Michigan shore trends northwestward $5\frac{1}{2}$ miles to Rocky Point, the shore bank under the depth of 18 feet (5^m5) extending from the head of the bight for $1\frac{1}{3}$ miles. North $1\frac{1}{4}$ miles from Rocky Point the hitherto common broad channel for both upbound and downbound vessels divides; that for the former passing eastward, and that for downbound vessels westward of Neebish Island. 5

From Hay Point the coast of St. Joseph Island turns abruptly eastward for $1\frac{1}{4}$ miles, and then runs northwestward $6\frac{1}{3}$ miles to **Richardson Point**, being fronted by a shallow bank two-thirds of a mile wide. 10

Leading lights.—Leading lights are exhibited from a bay on the west side of Rocky Point. The front light, *occulting white*, is exhibited at an elevation of 47 feet (14^m3), from a steel tower with white rectangular daymark on **Pilot Island**; the rear light, *fixed white*, is exhibited, at an elevation of 67 feet (20^m5), from a similar structure about a third of a mile, 196° from the front light. These lights in line, astern, lead upbound vessels from Munuscong Lake to the Rains Wharf range. 15

Coast.—From Rocky Point, the Michigan shore trends in a general west direction 6 miles, being broken up into several shallow bays; thence, the shore runs northwestward 2 miles, and then northeasterly 5 miles to **Kemps Point**, forming a large shallow indentation. A mile northward of Kemps Point is the box sawmill of the Chicago Mill & Lumber Company. 20

Neebish Island is nearly 8 miles long, and half that distance in greatest breadth.

Middle Neebish (Upbound) Route extends from the lower junction of the separate channel in Lake Munuscong to the upper junction at Nine Mile Point, a distance of 16 miles, and has a least width of 500 feet (152^m4) and depth of 21 feet (6^m4). From Lake Munuscong light-and-bell-buoy to Sailors Encampment Channel the channel is 600 feet (182^m9) wide. Sailors Encampment Channel is 500 feet (152^m4) wide. Munuscong Channel, from the head of Sailors Encampment to Dark Hole, at the lower angle of Munuscong Channel, is wide and deep. The dredged channel through Munuscong Channel is 1,000 feet (304^m8) wide at the lower angle, 600 feet (182^m9) wide for about a mile above the lower angle. 500 feet (152^m4) wide thence to the upper angle and 1,200 feet (365^m8) wide at the upper angle turning into Middle Neebish Channel. 25 30 35

Middle Neebish Channel is 800 feet (243^m8) wide from the upper angle of Munuscong Channel to near the dyke and 500 feet (152^m4) wide in the rock cut along the dyke. The turn at the junction with the lower channel in Lake Nicolet has an extreme width of 1,000 feet (304^m8). 35

West Neebish (Downbound) Channel is about 15 miles long from the upper junction of separate channels at Nine Mile Point in Lake Nicolet to the lower junction in the head of Lake Munuscong, has a least width of 300 feet (91^m4), and a least depth of $24\frac{1}{2}$ feet (7^m4). About 5,000 feet ($1,524^m0$) of the cut through rock is marked by retaining walls of rough stone. 40

Winter Point is the most southerly extremity of Neebish Island, and is surrounded by a shallow flat, through which a channel 300 feet (91^m4) wide is dredged for downbound vessels. 45

Leading lights.—Front.—A *fixed white* light is shown, at an elevation of 22 feet (6^m7), from a red, square, skeleton tower with slatted diamond-shaped daymark, erected on Winter Point of Neebish Island. The light is unwatched. 50

U.S. Chart 62.

Rear.—A *fixed white* light is shown, at an elevation of 63 feet (19^m2), from a red triangular skeleton tower with slatted diamond-shaped daymark, bearing 310°, and distant 325 yards (297^m2) from the front light. The light is unwatched.

5 This range leads upbound vessels from the light-buoy off Pointe aux Frênes to the line of Sailors Encampment leading lights.

Rains Island, about 40 feet (12^m2) high and over a mile in length, is just separated from the east side of Neebish Island; and its eastern extremity is known as Johnson Point, distant in a northeast direction 3 $\frac{3}{4}$ miles from Winter Point, the
10 shore bank gradually narrowing toward the former, which is steep-to.

Light.—A *flashing green* light, 24 feet (7^m3) high, is shown *every 2 $\frac{1}{2}$ seconds*, from a black post on a pier in 10 feet (3^m0) of water at the turn into Dark Hole Passage off Johnson Point. The light is unwatched.

From Richardson Point of St. Joseph Island, the coast trends northwesterly
15 $3\frac{1}{2}$ miles to **Everens Point** and is fronted by a shallow bank which, midway, stretches off 1 $\frac{3}{4}$ miles. Thence the coast of St. Joseph Island turns northeastward for 1 $\frac{1}{4}$ miles to Rains wharf, near a range of lights. Thence, the coast of St. Joseph Island, with several small wharves projecting from it, runs northwest nearly 1 $\frac{1}{2}$ miles to Coyle Point.

20 **Sailors Encampment leading lights.**—To lead upbound vessels from Munuscong Lake to Johnson Point, in conjunction with the Pilot Island range, two white, square towers are erected on St. Joseph Island 269 yards (245^m9) apart. They exhibit *fixed white* lights, at heights of 35 and 83 feet (10^m7 and 25^m3); the rear bearing from the front 016°.

25 **Buoys.**—In addition to the two sets of leading lights the channel is well marked by light, can and conical buoys.

Rains Wharf range.—Two poles are erected 145 yards (132^m6) apart, on St. Joseph Island, which at heights of 21 and 22 feet (6^m4 and 6^m7) exhibit *fixed red* lights. These in conjunction with the next mentioned range lead, bearing
30 314°, from the line of Sailors Encampment to that of Harwood Point range (*see* page 391).

Point of Woods range.—Front light.—A *flashing red* light, 26 feet (7^m9) high, is shown *every second* from a post with white, diamond-shaped daymark, erected on a pier on the east side of Neebish Island, half a mile northwestward
35 from the north end of Rains Island. The light is unwatched.

Rear light.—A *fixed red* light, 42 feet (12^m8) high, is shown from a black, skeleton tower with white, diamond-shaped daymark, erected on a pier, and bearing 314°, distant 110 yards (100^m6) from the front light. The light is unwatched.

40 Point of Woods range is used in conjunction with Rains wharf range.

Buoys.—The edges of the channel are well marked by light, can and conical buoys.

Dark Hole, East range.—Front.—On the north end of Rains Island is erected a red, square, tower from which, at a height of 33 feet (10^m1), is shown a
45 *flashing red* light *every second*.

U.S. Chart 62.

Rear.—A red, skeleton tower is situated 310 yards (283^m4), 176°, from the front light. From a height of 79 feet (24^m1), it exhibits a *fixed red* light.

Stribling Point (*Lat. 46° 19' N., Long. 84° 07' W.*).—From Coyle Point the coast of St. Joseph Island runs north nearly 3 miles to Stribling Point, which, with its leading lights, are described on page 377. 5

From **Mirre Point**, the east coast of Neebish Island trends northward 3 miles, to a group of small islets called Hen and Chickens, and on one of these stands the front light of **Hen and Chickens** range described on page 378 in connection with the passage between St. Joseph and Sugar Islands. 10

Harwood Point, East range.—Front.—On the southeast end of Sugar Island is erected a white, square, pyramidal tower, from which, at a height of 29 feet (8^m8), is shown a *flashing white* light *every second*.

Rear.—A white daymark on a black, square, skeleton tower, situated 334 yards (305^m4), 356°, from the front light, shows from a height of 61 feet (18^m6), 15 a *fixed white* light.

Munuscong Channel.—Dark Hole East range at the south end, and Harwood Point East range at the north end, lead through Munuscong Channel.

Buoyage.—In addition to the leading lights, the channel is well marked by numerous light, can and conical buoys. 20

Middle Neebish is the name given to the dredged cut 3¼ miles long between Neebish Island and Sugar Island, the shores of which are about half a mile apart. This channel is for upbound vessels between Detour Passage and Sault Ste. Marie, but vessels downbound to St. Joseph Channel also use it.

This channel is 21 feet (6^m4) deep and has a dyke on the northeast side of the upper half of the channel. On the dyke are three red steel towers, from each of which is shown a *flashing red* light *every 4 seconds*. There is a light at each end of the dyke and one near the centre. The channel is 800 feet (243^m8) wide from the upper angle of Munuscong Channel to near the dyke and 500 feet (152^m4) in the rock cut along the latter. The turn at the junction with the lower channel in Lake Nicolet has an extreme width of 1,000 feet (304^m8). Stribling Point leading lights (*see* page 377) lead through this channel, as also the following ranges:— 25 30

Middle Neebish North leading lights.—Front.—From a white slatted oval daymark, erected on a skeleton tower, is shown, from a height of 31 feet (9^m4), a *flashing white* light *every second*. 35

Rear.—At a distance of 830 yards (759^m0), 292°, from the front light, is erected a similar daymark from which, at a height of 46 feet (14^m0), is shown a *fixed white* light.

Junction light.—A red, skeleton tower erected on a concrete pier marks the northeast junction of the Middle Neebish and Lake Nicolet cuts. From this tower, at a height of 26 feet (7^m9), is exhibited a *flashing red* light *every 2½ seconds*. 40

In addition to the lights described, the channel is well marked by light, can and conical buoys.

Lake Nicolet.—From the front lights of Middle Neebish ranges the upbound track leads through the southern part of Lake Nicolet, the first 4 miles being 45

U.S. Chart 62.

through a dredged cut the edges of which are marked with various pairs of lighted and unlighted buoys. Thence, the same course continues another mile to a little north of Nine Mile Point of Sugar Island, when it joins the common
5 channel to Sault Ste. Marie.

Lower Nicolet, East leading lights.—Front.—On the north end of Neebish Island is erected a red, square, pyramidal tower, with a red vertical-slatted daymark. From a height of 40 feet (12^m2), it exhibits a *flashing red light, every second.*

10 **Rear.**—From a similar mark, situated 150° , 586 yards (535^m8) from the front light, is shown a *fixed red light* at a height of 77 feet (23^m5).

Sugar Island, west coast.—From the southwest point of Sugar Island, the coast trends 2 miles northward to **Shingle Bay**, off which shallow water makes out nearly $1\frac{1}{2}$ miles, thence $3\frac{1}{3}$ miles northwestward to **Nine Mile Point** where
15 shallow water extends 300 yards (274^m3). From Nine Mile Point, the coast runs $5\frac{3}{4}$ miles northerly to the head of a narrow, shallow indentation called **Wasig Bay**. The western entrance point of this small bay, one mile long, can be called the head of Lake Nicolet.

20 **Nine Mile Point light.**—Marking the edge of the bank off this point, in a depth of 12 feet (3^m7) of water, is a red column adjoining the lamphouse and standing on a concrete pier, and showing a *flashing red light, every $2\frac{1}{2}$ seconds*, at a height of 32 feet (9^m8).

Upper Lake Nicolet leading lights.—Front.—South of Wasig Bay and just northeast of **Six Mile Point** stands in 20 feet (6^m1) of water a black skeleton
25 tower, with white daymark, on concrete pier, and showing a *flashing white light every second*, at a height of 31 feet (9^m4).

Rear.—At a distance of 1,066 yards (974^m8), 340° , is situated a *fixed white light* showing from a height of 80 feet (24^m4).

This range leads through the northern part of Lake Nicolet, and is used on
30 upbound course.

Fog-bell.—From a steel bell tower, erected on the pier of the Middle Lake Nicolet leading light, a bell sounds, during foggy weather, *one stroke every 15 seconds.*

West Neebish Channel.—The whole of this downbound channel, 15 (13
35 nautical) miles from Winter Point to Nine Mile Point, has only one pair of leading lights, but its five stretches are marked by numerous pairs of beacon lights with additional beacons or light-buoys at the changes of course. For a better comprehension of these various aids, the master of a vessel should consult the chart. From Nine Mile to Six Mile Point the common track is through the
40 northern part of Lake Nicolet for 3 miles. (*See page 393*).

Light.—A *fixed white light* is shown, at an elevation of 46 feet (14^m0), from a black, skeleton tower with a white daymark, located on the east side of the river abreast Saw Mill Point.

Submarine Cable.—Power lines cross the channel at the upper end of the
45 rock cut. The lookout tower of Coast Guard Station No. 4 is erected at this point also.

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Fog signal.—Rock Cut fog-horn, sounding *one blast every 15 seconds*, is located adjacent to the Coast Guard station.

West Neebish lower leading lights.—Front.—On the axis of the upper course of West Neebish Channel is erected on a concrete base a skeleton tower, the upstream face painted white. From this is exhibited, at a height of 65 feet (19^m8), a *fixed green light*. 5

Rear (*Lat. 46° 17' N., Long. 84° 13' W.*).—A white, steel tower with a white rectangular daymark, located 650 yards (594^m3), 182° from the front light, exhibits, at an elevation of 140 feet (42^m7), a *fixed green light*. 10

Ferry.—From Maloney dock on Neebish Island, a ferry crosses to the Michigan mainland shore, a short distance above the lower leading light mentioned above.

The following amendment to Rule 19 of the Rules and Regulations for the St. Marys River has been approved and is in force: 15

West Neebish Channel shall be closed to all small craft of less than 100 tons (gross), except that owned or operated by the United States of America or the Government of Canada and/or tugs regularly engaged in commercial towing. All such traffic, either upbound or downbound, shall use the Middle Neebish Channel. 20

Sand Island, about one mile long, lies on the east side of the channel, abreast of the northern portion of Neebish Island.

West Neebish Upper Channel leading light.—On the extended axis of this channel, a *fixed white light* is exhibited, from the same square skeleton tower as Middle Neebish South range rear daybeacon. 25

Lake Nicolet Channel, upper entrance.—After passing Nine Mile Point light (*see page 392*), vessels follow the line of the Middle Lake Nicolet leading lights until those of Fréchette Point come into line, abreast Six Mile Point. A light-buoy moored about one mile northward of Nine Mile Point and just eastward of the line of range, shows a *flashing red light every 4 seconds*. 30

From Six Mile Point, the channel has been dredged to a depth of 24³/₄ feet (7^m5), through the shallow river bottom, and the islands east of Mission Point; 1,000 feet (304^m8) wide at the lower entrance, the channel tapers to a width of 600 feet (182^m9) before Fréchette Point is reached.

Light-buoy.—Six Mile Point black light-buoy is moored in 24 feet (7^m2) of water on the west side and at the lower end of the cut. It shows a *flashing green light every 4 seconds*. 35

Fréchette Point leading lights.—The centre line of this part of the channel is marked by a range of two *fixed green lights*, 2,500 feet (762^m0) apart, shown at heights of 38 and 80 feet, from black, square, pyramidal skeleton towers equipped with white slatted daymarks. 40

Six Mile Point leading lights.—The upper stretch, 600 feet (182^m9) wide, 24³/₄ feet (7^m5) deep and 3 miles in length, is marked by a range of two *fixed white lights*, 658 yards (601^m6) apart, shown at respective heights of 26 and 45 feet, (7^m9 and 13^m7), from white cylindrical towers on concrete piers, located at Six Mile Point. 45

Fréchette Point light-buoys.—Two-thirds of a mile below Fréchette Point, a black light-buoy, showing a *flashing green light every 4 seconds*, is moored

U.S. Chart 63.

on the west side of the channel. The east side of the channel, at the bend nearly opposite Fréchette Point lowlight, is marked by a red conical light-buoy moored in 21 feet (6^m4) of water, exhibiting a *flashing red light every 4 seconds*.

- 5 **Little Rapids Cut lights.**—That part of the channel passing through the islands east of Mission Point is called Little Rapids Cut, and is marked at its upper and lower ends by two pairs of lighted beacons. The lower pair consist of a *flashing green light* and *flashing red light*, showing *every 2½ seconds* from a black mast and a red mast, respectively, with tanks at their bases. The eleva-
 10 tions of the lights are, respectively, 18 and 20 feet (5^m5 and 6^m1). The upper pair are *fixed green* and *fixed red* shown from similar structures at a height of 18 feet (5^m5).

- Light-buoys.**—Marking the south side of the turn in the channel from Little Rapids Cut to Bayfield Channel are three black light-buoys, showing *flashing*
 15 *green lights*. A red light-buoy, showing a *flashing red light*, is moored at the junction of the main ship channel and that from Lake George.

Bayfield Rock leading lights.—From the turn above Mission Point, the channel turns westward, is at least 1,000 feet (304^m8) wide, dredged to a depth of 25 feet (7^m4), and leads to the foot of the United States Canal.

- 20 Its centre line is marked by a range of lights located on the northwest point of Sugar Island.

The lights are *fixed white*, and are shown at heights of 18 and 34 feet (5^m5 and 10^m4), from white, octagonal, pyramidal towers 315 yards (288^m0) apart and bearing in line 109°.

- 25 **Bayfield Dyke light.**—On the overcast bank, 1¼ miles below the canal entrance, a *quick flashing red light* is shown, at an elevation of 25 feet (7^m6) from a lantern on a mast.

Light-buoy.—The north side of the channel is marked by a red light-buoy, showing a *flashing red light*, moored half a mile below the canal entrance.

- 30 **Sault Ste. Marie** is situated about 17 miles below the head of St. Marys River. The Canadian city had a population of 32,452 in 1951, and like the United States town on the opposite side of the river has many manufacturing industries supplied with power from the St. Marys Falls.

- 35 **Customs.**—It is a port of entry to which all the Canadian customs outports on the North Channel of Lake Huron are subject as far east as Thessalon, and as far northward as Michipicoten Harbour, Lake Superior.

Radio station.—The Canadian establishment is situated on the high land eastward of the city; the call letters are V.B.B. It is operated all the year, but after the close of navigation the station is closed from 8 p.m. to 8 a.m.

- 40 **Government wharf** (*Lat. 46° 30' N., Long. 84° 20' W.*)—The Canadian Government wharf is situated one mile southeastward of the lower entrance to the Canadian Canal. It is of concrete construction, extends 645 feet (196^m5) from the shore in a southwesterly direction and has an ell extending 310 feet (94^m5) northwesterly. There are large freight sheds on the wharf and an electric
 45 light near the southeast corner. A slip, 500 feet (152^m4) long and 19.5 feet (5^m9) deep, with a width of 200 feet (61^m0) at its entrance and 80 feet (24^m1) at its inner end, extends along the east side of the wharf. Dredging to a depth of 24½ feet (7^m4) has been done in front of the wharf over an area 550 feet (167^m6) long on its northerly side along the face of the wharf and slip entrance and

U.S. Chart 63.

1,000 feet (304^m8) long in its southerly side. This area extends from the wharf to the northerly limit of the river channel. The basin between the wharf and the coal has a depth of 16 feet (4^m9).

Buoys.—The east side of the above slip is marked by a red spar buoy. 5

Harbour front depths.—From the Government wharf to the ferry wharf, there is a depth of about 17 feet (5^m2) over a width of 300 feet (91^m4), with a depth of 20 feet (6^m1) outside this area to the river channel. Between the ferry wharf and coal wharf of the Algoma Central Railway is a depth of 20 feet (6^m1). The slip between the New Ontario dock and the Soo Falls Brewing Company's wharf, 500 feet (152^m4) long and 200 feet (61^m0) wide, was dredged to a depth of 18½ feet (5^m6). The slip between the New Ontario dock and the coal wharf of the Algoma Central Railway, 750 feet (228^m8) long and 135 feet (41^m1) wide, has been dredged to depth of 18½ feet (5^m6). On the west side of the Imperial Oil Company's wharf a slip 240 feet (73^m2) long was dredged to a depth of 17 feet (5^m2). 10 15

Repairs.—A floating dock, owned by A. B. McLean and Sons, has a lifting capacity of 1,100 tons and a vessel with a draught of 14 feet (4^m3) can be docked; the width inside at the top is 47 feet (14^m3) and at the bottom 46 feet (14^m0); electricity and compressed air are available as well as facilities for fighting fire. 20

Canadian Canal.—This canal, cut through red sandstone, is about 1½ miles long between the extreme ends of the upper and lower entrance piers, and has an average width of 150 feet (45^m7).

Lock.—A masonry lock is situated near the lower end of the canal, 900 feet (274^m3) long and 60 feet (18^m3) wide, with 18¼ feet (5^m5) of water over the sills. The lift is from 17 to 21 feet (5^m2 to 6^m4), depending upon the stage of the water. The gates and culverts are operated by electricity. There are no restrictions regarding overhead clearance. 25

Signal lights.—At each entrance to the lock is a signal showing *red*, and *green* lights. On both downstream piers and both upstream piers are signs marked "Limit of Approach", and on the south downstream and north upstream piers, about 300 feet (91^m4) from the lock gates, are signs marked "Stop". 30

A *steady red* light or no light indicates "Stop" and that a vessel approaching the lock will be made fast before reaching the "Limit of Approach" sign. A *flashing red* light indicates that the lock is being prepared to receive the vessel. A *green* light indicates "Proceed". 35

Bridge.—Signals.—The international railway bridge crosses the canal about a quarter of a mile above the lock. The draw, which has a 15-foot (4^m6) clear height above the low water of Lake Superior, does not sound any whistle, but at night if closed, it shows a red light. The signal for opening the draw of the bridge, on the Canadian side only, is *three long*, followed by *two short* blasts of the whistle (— — — — —). 40

Canal lights.—The Canadian Canal and the cribwork approaches are illuminated by a row of arc lights on both sides. The lights are white, with the exception that the most easterly and the most westerly ones, one on each side, are *green*. 45

Lower entrance leading lights.—Two *fixed red* leading lights are exhibited on the shore northwestward of the eastern canal entrance. The front light is exhibited, at an elevation of 40 feet (12^m2), from a latticed pole with white,

U.S. Chart 63.

conical daymark: the rear light is exhibited, at an elevation of 63 feet (19^m2), from a square skeleton tower with white, diamond-shaped daymark, 675 feet (205^m8), 321½° from the front light.

- 5 **Light-buoy.**—A light-buoy, painted black and showing a *flashing white* light, is moored 317 yards (289^m8) southeastward of the outer end of the south pier of the lower entrance of the Canadian Canal, and 75 yards (68^m6) southwest of the line of range.

- United States Canals** are two in number, the North and the South each
10 having two adjoining locks. The South Canal, consisting of the MacArthur (south) lock and the Poe (north) lock, is between Fort Brady pier and Centre pier. The North Canal, consisting of the Davis (south) lock and the Sabin (north) lock, is between the Centre pier and the pier protecting it from St. Marys Falls. The eastern part of the latter pier is named the Northeast pier and its
15 western part the Northwest pier.

The MacArthur lock is 800 feet (243^m8) long in chamber between gates, is 80 feet (24^m4) wide and has a depth of about 31 feet (9^m4) over its lower sill at low water. It is operated by electric power.

- The Poe lock** has a usable length of 650 feet (198^m0) and is 95 feet (29^m0)
20 wide, with a depth of 16½ feet (5^m0) over its lower sill. The depth in the lower level near the lock is 18 feet (5^m5) and in the upper level 21¾ feet (6^m7). It is operated by electric power.

- Davis and Sabin locks** (North Canal) each have a usable length of 1,300 feet (396^m2) and are 80 feet (24^m4) wide, with a depth of 23 feet (7^m0) over the
25 sills. Both locks are operated by electricity.

Canal lights (lower end).—Northeast pier light, *fixed red*, is shown from a concrete column erected on the southeast corner of the pierhead.

Leading lights.—Front.—A *fixed red* light is shown, at a height of 20 feet (6^m1) from a red post erected on the eastern end of the centre pier.

- 30 **Rear.**—A *fixed red* light, 30 feet (9^m1) high, is shown from a pole erected 35 yards (32^m0), 273° from the front light, thus marking the direction of the outer eastern part of the Centre pier.

A *fixed white* light is shown from the same pole, 5 feet (1^m5) above the rear light.

- 35 **Landing at east centre pier** (Lat. 46° 30' N., Long. 84° 20' W.).—Because of currents and eddies formed by emptying the locks, vessels must not attempt landing too close to the pier end, but should keep well out from the line of the pier face and lap the pier on either side before starting to land.

- 40 In emptying the locks, an eddy is formed along Fort Brady pier, moving upstream. When Poe lock is being emptied, the current at the end of the centre pier flows northward. When the northerly locks are emptying, the current is usually reversed. Wind conditions alter the condition.

- 45 **Signal to designate lock.—Upbound vessels.**—To indicate to upbound vessels the lock they are to take, light signals are shown, about 40 feet (12^m2) high, at the watch station near the east end of the east centre pier. Upbound vessels will be dispatched to such one of the several canals as may be suitable to

U.S. Chart 63.

relieve or obviate congestion, having due regard to the dimensions and draught of vessels. The signals consist of a horizontal row of four *amber* lights, spaced 6 feet (1^m8) apart, to designate the United States locks, and a fifth *amber* light, directly above the row, to designate the Canadian lock when its use may afford relief. All lights are out except when signalling. When used, four of the lights will show fixed and one light will flash, the relative position of the latter indicating the lock to be taken, as follows:—

MacArthur lock: South light of row flashing, others fixed.

Poe lock: Next to south light of row flashing, others fixed.

Davis lock: Next to north light of row flashing, others fixed.

Sabin lock: North light of row flashing, others fixed.

Canadian lock: Light above row flashing, others fixed.

All upbound vessels approaching the St. Marys Falls Canal, and desiring passage, shall signal for appropriate dispatch by blowing two long and two short blasts. The signal is then displayed until the vessel answers, with one long and one short blast, after which the lights go out. Observance of the dispatch signal will be considered mandatory. To avoid delays, light upbound vessels are requested to pump out in readiness for possible dispatch to the Poe or the Canadian lock.

Bridge Island is situated in the South Canal at the crossing of the International bridge. Upon it rest the centre piers of the movable dam and of the railroad drawbridge. Upbound vessels passing Bridge Island will take the south passage and downbound vessels the north passage, unless instructed to the contrary by the canal superintendent.

Bridge.—The International railroad bridge crosses the canal at Bridge Island, 1,200 feet (365^m8) east of the west end of the centre pier. Across the South Canal it has a draw swing span electrically operated, having a 15-foot (4^m6) clearance above the water. Across the North Canal, there is a double leaf bascule, electrically operated. The bridge is continued across the river at the head of the rapids by nine fixed spans, each approximately 232 feet (70^m7) clear width and 15 feet (4^m6) clear height above water surface.

Bridge lights and signals.—The swing bridge has a red light on upstream and downstream end of each abutment; a red light on each side of its centre pier: a red light on the west end of its centre pier protection: three lights on the centre line of top of swing span, one at each end and one in the middle, showing *red* when the bridge is *closed* and *green* when it is *open*.

Except when closed for the approach and actual passage of railway trains, the bascule span and the swing shall be maintained in open position during the season of navigation.

All vessels approaching either draw span of the bridge when closed, and desiring passage through it, shall signal therefor by *three whistle* blasts.

Upon receiving the opening signal, the bridge operator shall answer by giving *one long* and *one short* blast of the bridge horn, and he shall then proceed immediately to open the bridge.

In case the bridge cannot be opened, for any cause, the bridge operator shall answer by giving *five short* blasts of bridge horn; and the vessel shall then be stopped until the bridge is ready to be opened, when the bridge operator shall give *one long* and *one short* blast of the bridge horn for passage, and the vessel may *proceed*.

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Signals as to filling Davis and Sabin locks.—In order that masters of downbound vessels approaching the northwest pier may know when either the Davis or the Sabin lock is filling, two signals have been established. These
5 consist of *flashing yellow* lights, one placed on top of a light pole near the upper end of the short pier between the two locks and the other on top of the light pole, near the intermediate watch station on the northwest pier. The lights flash during the first 8 minutes of each lock filling, which is the period when flow toward the lock is increasing.

10 **Rules and Regulations.**—Masters of vessels should provide themselves with the following publications.

Rules and regulations for guidance and observance of those using and operating the canals of the Government of Canada, published by the Department of Transport, Ottawa, Ont.

15 Rules and regulations relating to anchorage and navigation in the St. Marys River, published by the United States Government.

Regulations to govern the opening of the two draws of the International bridge across the St. Marys Falls Canal, Michigan, published by the United States Government.

20 The United States publications can be obtained on application at the canal office, in the pump-house and office building between the Poe and the Davis locks.

Lake George is the name given to the sheet of water east of Sugar Island of the United States, the lake being 10 (9 nautical) miles in length north and
25 south, by 4 miles in greatest width. Its southern end is distant 4 miles from the north extremity of St. Joseph Island, the intervening water being formerly called **East Neebish Channel**. The north end of the lake is $14\frac{3}{4}$ (13 nautical) miles (by the channel) eastward of the Sault Ste. Marie canals. This lake and connecting waters were at one time used for general navigation, but now all
30 through-traffic goes west of Sugar Island, nothing but local traffic using the old route, by which, however, 13 feet (4^m0) water can be carried from St. Joseph Channel to Sault Ste. Marie by narrow and mostly tortuous channels, which, though buoyed, are not lighted, and should not be used except by those locally acquainted.

CHAPTER XIII

SAULT STE. MARIE TO COPPERMINE POINT

For description of the Canadian and United States Canals at Sault Ste. Marie see pages 395-398.

U.S. Chart 63.

5

DATUM.—See page 1.

Canadian Channel.—The channel leading to the Canadian Canal has been dredged to a depth of $22\frac{1}{2}$ feet (6^m8) and 500 feet (152^m4) wide. The sides of the channel are well marked by lighted and unlighted buoys. At the junction of the Canadian and United States Channel is a light-buoy painted in red and black horizontal bands and showing a *flashing green* light. The centre line of the channel is indicated by a set of leading lights located near the upper end of the canal. 10

Leading lights.—Two *fixed red* leading lights are exhibited leading to the Canadian Canal. The front light is exhibited, at an elevation of 34 feet (10^m4) from a skeleton tower, surmounted by an orange-coloured box with white, conical daymark at base of tower, on a pier 500 feet (152^m4) east of the Commercial dock; the rear light is exhibited at an elevation of 65 feet (19^m8) from a similar tower, 421 yards (385^m0), 051° from the front light. 15

Canadian lock signal lights.—See page 395.

20

Additional Signal Light.—A *red* signal light is shown from the upper entrance of the Sault Ste. Marie Canal above the C.P.R. bridge. This light is focused towards the Vidal Shoals. It is under the control of the lockmaster and will be displayed as a steady *red* signal if the approaching vessel is to tie up to one of the upper entrance piers or *flashing red* if the vessel is to proceed down-bound towards the lock. 25

The United States Channel through Vidal Shoals is dredged to 25.8 feet (7^m8) (1954) deep and 1,500 feet (457^m2) wide, which enables downbound vessels to approach the northwest pier nearly in line and facilitates their landing. The vessel course is marked by leading lights, bearing 076° , and located on the north side of the canal. 30

Leading lights.—**Lights.**—**Fog signal.**—Two leading lights are exhibited leading to the American Canal. The front light, *occulting red*, is exhibited at an elevation of 98 feet (29^m9), from a black skeleton tower with a white daymark, on the northwest pier; the rear light, *fixed red*, is shown, at an elevation of 98 feet (29^m9), from a similar structure on the dike, 2,700 feet (823^m0) from the front light. On the alignment of the two lights, 855 feet (260^m6), 256° , from the front light, is a white oval daymark. *Fixed red* lights are shown on the west centre, southwest and northwest pierheads. On the northwest pierhead a siren will be sounded in response to a three-blast signal of a downbound vessel when overtaken by fog while approaching the canal from Vidal Shoals. Masters of 35 40

U.S. Chart 63.

vessels are not encouraged to navigate the narrow channels during fog, but once having entered and fog setting in, this assistance is being given so that they may reach their objectives safely. The northern side of the channel is marked by a
5 red spar buoy at the western end, a red light-buoy, showing a *flashing red* light, and fitted with a radar reflector on the western side of the entrance to the Canadian channel at its junction with the American channel; a red and black light-buoy, showing a *flashing green* light at the dividing point of the two channels and by a red light-buoy, showing a *flashing red* light every 4 seconds, at its
10 eastern end. The southern side is marked by a black can buoy at its western end; a black light-buoy, showing a *flashing white* light every 4 seconds; and a black can buoy at its eastern end. A black spar buoy, moored eastward of Vidal Shoal, marks the limit of deep water in crossing between the United States and Canadian Canal approaches. A red spar buoy marks the eastern edge of a shoal off the
15 dock of the Northwestern-Hanna Fuel Co.

Signal to designate lock.—Downbound vessels.—Downbound vessel traffic is dispatched to the locks by light signals located approximately 40 feet (12^m2) above water and immediately west of the northwest pier end watch station. The signals consist of a horizontal row of four *amber* lights spaced 6 feet (1^m8)
20 apart to designate the four locks. All lights are out except when signalling. When used, three of the lights show fixed and one light flashes, the relative position of the latter indicating the lock to be taken as follows;

MacArthur Lock: South light of row flashing, others fixed.
Poe Lock: Next to south light of row flashing, others fixed.
25 Davis Lock: Next to north light of row flashing, others fixed.
Sabin Lock: North light of row flashing, others fixed.

All eastbound vessels approaching the canal and desiring passage shall signal for lock dispatch by blowing 2 long and 2 short blasts when approximately one-half mile above the northwest pier. The signal is then displayed until the
30 vessel answers with one long and one short blast, after which the lights go out. Observance of the dispatch signal is mandatory. A two-way loud speaker system permits the transmission of instructions and requests for information and the reception of messages directed by hand megaphone to the pier.

Radio Facility.—Station WUD.—31.—The Chief Lockmaster's vessel dispatch station on the tower of the administration building is equipped with a
35 75-watt medium frequency radiotelephone operating on Channels 30, 38, 40 and 51 and also a 50-watt very high frequency radiotelephone operating on Channels 1, 3 and 4. This station is considered to have an effective operating range of approximately fifty miles. Operation is limited to communication with vessels
40 on matters related to canal operation and traffic movement through the locks. The equipment is intended primarily for emergency purposes and masters are urged to provide supervision of the vessel's radiotelephone when approaching and transiting the canals so as to be promptly advised of changes in lock dispatch, impending bridge closures, etc. Masters should not ask for lock dispatch by
45 radiotelephone. The facility will not be used for this purpose except when regular dispatch equipment is inadequate or out of commission.

Landing at Northwest Pier.—Vessels should reduce speed to 2½ miles per hour upon entering the canal and should hold as far as possible to northward of Vidal Shoals range (keeping safe from cross currents due to flow over the rapids),
50 in order to make a broadside landing at the pier. It is advisable that landings be made about 1,000 feet (304^m8) from the pier end, in order to make ample allowance for northward drift resulting from the rapids discharge.

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Landing at Southwest Pier.—Downbound vessels dispatched to the MacArthur Lock are cautioned to hold the Vidal Shoals range until due north of the Southwest Pierhead Light. Due to strong current at the end of the southwest pier, such vessels should pass at least 200 feet (61^m0) to the north of the end of this pier. A *flashing white* light is shown on the pier 1,000 feet (304^m8) east of its west end, at pier height; vessels should land east of this light. 5

Landing at West Centre pier.—The filling of the locks cause a current to set across the end of the west centre pier, sometimes in one direction, sometimes in the other. Vessels bound for the Poe lock should not attempt to make the pier near the end. 10

Current toward Michigan Northern Power Canal.—A current, which apparently does not exceed one mile per hour, sets toward the Michigan Northern Power Company Canal, immediately on the south of the west or upper entrance of the ship canals. A westward enlargement of the power canal entrance in 1943 and a 1,200-foot (365^m8) extension of the southwest pier in 1945 were made to reduce the effect of the cross current along the south side of the navigation channel. Downbound vessels should make allowance for this current when taking the south canal for the MacArthur or Poe lock. 15

Wharves.—The piers of the Algoma Steel Corporation, Limited, are located on the upper St. Marys River about 2,500 feet (762^m0) west of the western approach to the Canadian Canal and include the coal pier, a pile trestle structure 990 feet (301^m7) long, used for the unloading of coal and the shipping of tar, pitch, etc.; the ore pier, a concrete superstructure on timber cribwork founded on a mattress of stonefill, 1,172 feet (357^m2) in length, used for the unloading of iron ore and the shipping of coke; the Commercial or rail pier, 400 feet (121^m9) long and 90 feet (27^m4) wide, extending into the St. Marys River from the south end of the ore pier. 20 25

The approach to the docks has been dredged to a depth of 24 feet (7^m3) for a width of 700 feet (213^m4) from the southwest corner of the Commercial dock, and the slip extending the whole length of the coal and ore docks to the same depth reducing to 21 feet (6^m4) near the inner end. A berth on the south side of the Commercial dock, 120 feet (36^m6) wide at the entrance and narrowing to 50 feet (15^m2), 460 feet (140^m2) in length, was dredged to a depth of 21½ feet (6^m5). 30 35

Buoy.—The west side of the approach to the docks is marked by a black spar buoy.

Light-buoy.—A black light-buoy, showing a *flashing white* light every 4 seconds, marks a submerged water intake crib off Big Point, 1½ miles above Vidal Shoals. 40

Pointe aux Pins light.—On the outer end of the low sand point at the southeast extreme of Pointe aux Pins, a *fixed red* light is shown, at an elevation of 30 feet (9^m1) from a white square wooden tower with a red roof.

Fog signal.—A fog-bell, located on the gallery of the main light gives one stroke every 8 seconds. 45

Pointe aux Pins leading lights.—The front light is shown, at an elevation of 28 feet (8^m5) from a white square tower with red roof and lantern. The rear light is shown, at an elevation of 53 feet (16^m2) from a similar structure located

U.S. Chart 63.

920 feet (280^m4) southwestward of the front light. The lights in line, bearing 232°, lead from the intersection of their alignment with the alignment of the United States Vidal Shoals Channel lights to abreast the light-buoy off Brush Point.

- 5 From Big Point to Brush Point, 2 $\frac{1}{4}$ miles above, there is a wide deep channel marked on the north side by three red spar buoys and a red light-buoy, showing a *flashing red light every 4 seconds*. From Brush Point and Pointe aux Pins, on the opposite side of the river, to abreast Cedar Point, a distance of 2 $\frac{3}{4}$ miles, the dredged channel is 1,000 feet (304^m8) wide and 26 feet (7^m9) in depth. This
10 section of the channel is marked on the north side by two red light-buoys, showing *flashing red lights every 4 seconds*, and three red conical buoys; the south side is marked by two black light-buoys, showing *flashing white lights every 4 seconds*, three black can buoys and a black light-and-bell-buoy showing a *flashing white light every 4 seconds*.

- 15 **Brush Point leading lights, United States.—Front.**—A white square pyramidal tower, on a concrete pier located in 10 feet (3^m0) of water 475 yards (434^m3) southeastward of Pointe aux Pins main light exhibits, at an elevation of 33 feet (10^m1), an *occulting green light every 2 seconds*. An auxiliary passing
20 *occulting green light every 2 seconds*, and visible from 063 $\frac{1}{2}$ ° to 211°, is shown at an elevation of 18 feet (5^m5) from the same tower.

Rear.—A steel tower, with a white rectangular daymark, on Brush Point, 1,260 yards (1,152^m2), 074°, from the front light exhibits, at an elevation of 66 feet (20^m1), a *fixed green light*.

- Fog-bell.**—Brush Point fog-bell is sounded from a black skeleton frame-
25 work adjacent to the coast guard lookout station. The bell is operated by hand in response to signals from vessels.

Buoy.—A black can buoy is moored about 400 feet (121^m9) northeastward of Brush Point front leading light.

- Brush Point.—Gauge for ascertaining available draught.**—A gauge is
30 maintained and bulletins are posted at coast guard lookout station No. 6, Brush Point, so that masters of deep-draught vessels when passing that station may ascertain the draught of water available in the Poe lock.

- A dispatch station**, located north of the Sault Ste. Marie waterworks pump-house at Brush Point, is maintained by the U.S. Coast Guard for the purpose
35 of directing downbound vessels to the lock where the least delay to their passage will be incurred. The station is kept informed by telephone of the changing conditions at the locks. This service facilitates the movement of vessels through the canals.

- Birch Point leading lights.**—Birch Point lies a mile southwestward of
40 Cedar Point and on it are two black skeleton towers, each with a daymark painted orange with a white triangle, from which *fixed white lights* are shown, at an elevation of 53 and 78 feet (16^m2 and 23^m8). The rear light is 970 feet (295^m6) from the front one and the two in line, bearing 139°, lead past Point Iroquois Shoals.

- 45 **Birch Point range beacon.**—To increase the usefulness of Birch Point range, a range beacon has been established on the line of the leading lights on a hill 2,970 feet (905^m2), 139°, from the rear light. The beacon is painted with a white triangle against the orange background.

U.S. Chart 63.

From Pointe aux Pins, the shore trends in a west by north direction $2\frac{1}{2}$ miles to Pointe aux Chênes, thence in a general northwest direction 5 miles to Gros Cap. The whole of this shore is fronted by an extensive shallow bank with the ship channel between it and Point Iroquois Shoals.

5

Dredged channel.—Dredging operations have removed the former Middle Ground, located about $1\frac{1}{2}$ miles west-northwestward of Round Island. The improved area has a width of about 1,500 feet (457^m2) at the easterly end, and 4,000 feet ($1,219^m2$) at the westerly end, and is 27 feet (8^m2) deep.

Buoyage.—The above channel is marked on the southern side by a black light-buoy, showing a *flashing green* light every 4 seconds, at the eastern end and two black can buoys to the westward of the light-buoy. The northerly side is marked by a red light-and-bell-buoy, showing a *quick flashing red* light and fitted with a radar reflector, a red conical buoy and a red light-buoy, showing a *flashing red* light every 4 seconds. A light-and-gong-buoy, painted in black and white vertical stripes, is moored on the alignment of Birch Point leading lights, about $1\frac{1}{2}$ miles from the front light; it shows a *short-long flashing white* light. Vessels are required to leave the buoy on the port hand in passing.

15

Point Iroquois, the southwest entrance point of St. Marys River, lies $6\frac{1}{4}$ miles northwestward of Birch Point.

20

Point Iroquois Shoals, with depths of 13 to 18 feet (4^m0 to 5^m5) at the outer edge, extend $1\frac{1}{2}$ to $1\frac{3}{4}$ miles offshore between points one to 3 miles southward of Point Iroquois.

Buoyage.—A black light-buoy, showing a *flashing white* light every 4 seconds, is moored abreast a 19-foot (5^m8) spot close south of Point Iroquois Shoals and a black can buoy marks the northwest and southeast ends of the shoal. A red light-and-bell-buoy fitted with a radar reflector, is moored $1\frac{1}{2}$ miles east of Point Iroquois light. The west side of the shoal bank off Pointe aux Chênes is marked by two red spar buoys fitted with radar reflectors.

25

A black can buoy is moored about 5,700 feet ($1,737^m4$), $025\frac{1}{2}^\circ$, from Point Iroquois light.

30

Gros Cap, the northeast entrance point to St. Marys River, is $3\frac{3}{4}$ miles northeastward of Point Iroquois lighthouse. The land behind the extreme of the cape rises to an elevation of about 400 feet (121^m9) and is really the southwest corner or extreme of a ridge, that continues at much the same elevation for 4 miles to the eastward, and $3\frac{1}{2}$ miles to the northward, paralleling the shoreline.

35

A rocky reef, with a least depth of 4 feet (1^m2), lies 300 yards (274^m3) northwest of Gros Cap. On a line south from Gros Cap is the western margin of the shallow bank making out from the northeast shore of St. Marys River.

Gros Cap Reefs, with depths of 17 to 22 feet (5^m2 to 6^m7) over them, lie with the southeast extreme $1\frac{3}{4}$ miles off Gros Cap. A 23-foot (7^m0) spot, marked by a red spar buoy, is moored at the west end of the reef.

40

Light.—**Fog signal.**—**Radio beacon.**—A *flashing red* light is exhibited, at an elevation of 45 feet (13^m7), from a white concrete tower on Gros Cap Reefs. A diaphone sounds 3 blasts every minute.

45

There is a radio beacon at the light-tower, which is synchronized with the fog signal for distance finding purposes.

U.S. Chart 92.

Point Iroquois to Whitefish Point.—This stretch of coast extending about 18 miles westerly, and thence about 20 miles northerly, forms the south and west sides of Whitefish Bay.

- 5 **Light.**—On Point Iroquois, a *flashing white* light is shown *every 6 seconds*, at an elevation of 73 feet (22^m3), from a white, conical brick tower with dwelling attached. The light station is equipped with long-distance telephone connection.

Fog signal.—A fog diaphone sounds *one blast every 30 seconds*.

- 10 From Point Iroquois, shoal water extends three-quarters of a mile in a northeasterly and northerly direction with depths of 19 and 20 feet (5^m8 to 6^m1) near the outer end. About 2 miles to the westward, at Nadoway Point, a rocky flat extends 1 $\frac{1}{4}$ miles offshore to a depth of 16 feet (4^m9), 1 $\frac{1}{2}$ miles northwestward to 18 feet (5^m5) and one mile northeastward to 17 feet (5^m2).

- 15 From Nadoway Point to **Salt Point**, about 11 miles from Point Iroquois light, the shore is steep-to. The shorebank makes off half a mile north of Salt Point to a depth of 20 feet (6^m1).

- 20 **Tahquamenon Bay**, the southwesterly corner of Whitefish Bay, is very shallow and rocky, and the shoal water extends off to a line running from Salt Point northwesterly through Tahquamenon Island, which lies about 4 miles easterly from the north point of the bay.

From Tahquamenon Bay northward for about 9 miles to the mouth of Shelldrake River, the shorebank diminishes in width to one mile at the latter place.

- 25 From one mile north of Shelldrake River to Whitefish Point, the shore may be safely approached to within half a mile. Brown Fisheries Dock, on the west shore of Whitefish Bay about three-quarters of a mile from the end of Whitefish Point, is a pile wharf about 200 feet (61^m0) long with a depth of 5 feet (1^m5) at its outer end. The United States Coast Guard has a breakwater 400 feet (121^m9) north of the dock to protect its launchway.

- 30 **Light.**—On Whitefish Point, (*Lat. 46° 46' N., Long. 84° 59' W.*), 7 $\frac{1}{2}$ miles northward of Shelldrake River, a *flashing white* light is shown *every 20 seconds*, at an elevation of 76 feet (23^m2), from a white, skeleton tower with an enclosed stair cylinder and attached dwelling.

Fog signal.—A two-tone fog signal of *two blasts every 30 seconds* is made.

- 35 **Radio beacon.**—A radio beacon is operated at this station.

Storm signals.—Day and night signals are displayed from a steel tower located 667 feet (203^m3) northeastward of the lighthouse.

- 40 **Light-and-bell-buoy.**—A light-and-bell-buoy, showing a *flashing white* light *every 4 seconds*, is moored 2,750 feet (838^m2), 024°, from Whitefish Point light. It should be given a berth of a quarter of a mile in passing.

GROS CAP TO COPPERMINE POINT.—**Jackson Island** lies 1 $\frac{1}{4}$ miles northwestward of Gros Cap. It is just separated from the mainland and is steep-to on the outside, the shore being deep-to for the most part.

- 45 From Jackson Island the shore rounds to a general northeasterly direction 9 miles to the entrance to **Goulais Bay**, and continues steep-to to this point. Goulais Bay extends in 6 miles in a north-northeasterly direction and is 3 miles in width at the mouth.

U.S. Chart 92.

Wharf.—About the middle of the west side of the bay, a wharf extends about 140 feet (42^m7) into the bay. Depth at the outer end is about 3½ feet (1^m0).

Anchorage, with good shelter in from 7 to 10 fathoms (12^m8 to 18^m3), in mud bottom, will be found off the wharf. 5

From the head of the bay the shorebank extends off about 1¼ miles, and on the west side for 500 yards (457^m2) with the exception of the first point south of the wharf, about 2 miles from it, which has deep water about 175 yards (160^m0) offshore. 10

Goulais Point, the southwest entrance point to the bay of the same name, has shoal water extending one-third of a mile to the south, but between it and the next point, 2 miles to the northeastward, the bank extends out three-quarters of a mile from the shore. Entering Goulais Bay keep in mid-channel, heading 041°, until the wharf is well open, when steer a short distance off it. 15

Light.—A *flashing white light* (Lat. 46° 42' N., Long. 84° 31' W.) is exhibited, at an elevation of 32 feet (9^m8), from a steel tower with white daymark, on the eastern side of Goulais Point.

Ile Parisienne lies with its south end 8 miles west-southwestward of Goulais Point. It is 5 miles long and one-half to one mile wide. On the west side the shorebank extends offshore 300 yards (274^m3) beyond which the water is good. On the east side the bank extends from one to 6 cables and from the south end of the island for three-quarters of a mile. The course from Whitefish Point to Gros Cap Reefs light passes 2 miles southwestward of the island. 20

Light.—On the southwest extremity of the island is erected a hexagonal reinforced concrete tower with six buttresses, surmounted by a red polygonal lantern, which from an elevation of 54 feet (16^m5), exhibits an *occulting white light every 6 seconds*, thus:—light 4 seconds; eclipse 2 seconds. The light is visible at a distance of 14 (12 nautical) miles. A white rectangular wooden dwelling is situated close northeastward of the lighthouse. 30

Fog signal.—From a white square wooden building located 70 feet (21^m3) eastward of the lighthouse, a diaphone gives 2 blasts *every minute*, thus: blast, 3 seconds; silence, 3 seconds; blast, 3 seconds; silence 51 seconds.

Parisienne Shoal, lying northward of Ile Parisienne, is a rocky shoal 1¾ miles long, north and south, and one mile wide; the shoalest spot of 7 feet (2^m1) lies 2¼ miles 018° from the north point of Ile Parisienne. 35

Buoy.— A black spar buoy marks the eastern edge of the shoal.

Maple Island lies about 6 miles north of Goulais Point and connected to the main shore by a shallow boulder reef, through which a channel exists with over 12 feet (3^m7) of water. The channel is about one cable east of the island. About a mile and a half south of Maple Island is a shallow unsounded bay; from the southern entrance point of the latter to Goulais Point, a distance of 3½ miles, the shore is clear with good water a short distance off. A red conical ice buoy is moored off the western side of Maple Island. 40

Rudderhead Point, the southeast entrance point to Batchawana Bay and 3½ miles north by east from Maple Island, has good water to within 1½ cables of the shore which continues to Maple Island. 45

U.S. Chart 92.

North and South Sandy Islands lie across the entrance to Batchawana Bay and, with the surrounding reefs and shoals, extend about $5\frac{1}{4}$ miles in a north and south direction and about 2 miles east and west. The bank, with 5 depths of less than 18 feet (5^m5), extends three-quarters of a mile south by east from South Sandy Island and $2\frac{1}{2}$ miles north by west from North Sandy Island; **Steamboat Island**, a small islet, lies half a mile north of North Sandy Island.

Buoys.—A black can ice buoy is moored $7\frac{1}{2}$ cables southeastward of the southern extremity of South Sandy Island. A black light-and-bell-buoy, showing 10 a *flashing white* light, is moored about $2\frac{1}{2}$ miles northward of North Sandy Island.

Batchawana Bay, lying to the eastward of a line joining Rudderhead Point to Corbeil Point, 5 miles to the northwestward, is a deep, land-locked indentation, 10 miles long and 7 miles wide, with Batchawana Island in the middle. The northern point of **Batchawana Island**, which is almost steep-to, 15 is separated from Sand Point of the mainland by a channel a quarter of a mile wide, which is 4 fathoms (7^m3) deep, and the main passage into the inner bay. On the south side, the island is joined to the mainland by an extensive shallow flat over which a depth of 9 feet (2^m7) can be carried.

Wharf.—On the inside of the north entrance point of the bay is a Govern- 20 ment wharf 120 feet (36^m6) long, with a depth of 14 feet (4^m3) at the outer end and 5 feet (1^m5) at the inner end; in the berth alongside, 50 feet (15^m2) in length, there is a depth of 13 feet (4^m0). This wharf provides good shelter. An extension of 80 feet (24^m4) to the westward has been added to the outer end of the face of the wharf, where there is a depth of 14 feet (4^m3).

25 **Anchorage** will be found at the head of the outer bay, in 5 to 15 fathoms (9^m1 to 27^m4), over sand bottom, giving good shelter from all winds except from the south.

Corbeil Point (*Lat. $46^{\circ} 53'$ N., Long. $84^{\circ} 37'$ W.*), before mentioned, is the northwestern entrance point to Batchawana Bay. From the extreme of the 30 point, shoal water extends in a southerly direction two-thirds of a mile to $14\frac{1}{2}$ feet (4^m5); to the westward, the bank makes out half a mile, but to the eastward the shore may be approached to within $1\frac{1}{2}$ cables.

Buoy.—A red spar buoy is moored at the south extreme of this shoal.

35 **Light.**—A *fixed white* light is exhibited, at an elevation of 77 feet (23^m5) from a white, square, wooden dwelling surmounted by a white, square, wooden lantern on Corbeil Point.

Harmony Bay, the northwestern part of Inner Batchawana Bay and just north of Batchawana Island, is quite landlocked and anchorage will be found in 6 to 14 fathoms (11^m0 to 25^m6), over mud bottom.

40 From Corbeil Point, the shoreline trends northwest $2\frac{1}{2}$ miles, thence the same distance north to Pancake River in the eastern part of **Pancake Bay**. The shoreline between is fronted by a narrow bank, extending about a quarter of a mile offshore, with the exception of a wider bank northwestward of Corbeil Point lighthouse. Pancake Bay is shallow and unimportant.

45 **Pancake Point**, the northwest entrance point to Pancake Bay, lies $6\frac{1}{2}$ miles northwestward of Corbeil Point; the shorebank extends off a quarter of a mile from the point.

U.S. Chart 92.

Pancake Shoal lies, with the shoalest spot of 4 feet (1^m2), $4\frac{2}{3}$ miles 191° from Coppermine Point. From this spot shoal water makes off about half a mile north and south.

Light-buoy.—A black light-and-bell-buoy, showing a *flashing white* light, 5 is moored at the northern end of this shoal.

Outer Pancake Shoal, $1\frac{1}{2}$ miles to the southwestward from Pancake Shoal and separated from it by a deep passage, has its shoalest spot of 15 feet (4^m6) near the northern extreme $5\frac{3}{4}$ miles, 200° , from Coppermine Point lighthouse. The shoal extends half a mile to the south from this spot and is quite narrow. 10

Buoy.—A red, conical ice buoy marks the western side of Outer Pancake Shoal.

From Pancake Point, the shoreline trends in a general northwest by west direction 4 miles to Coppermine Point and is fronted by a shallow bank extending off 200 yards (182^m9) with the exception of **Whiskey Rock**, about a quarter of 15 a mile offshore and $1\frac{1}{2}$ miles west of Pancake Point, which has less than 6 feet (1^m8) of water over it, with good water a short distance off.

CHAPTER XIV

COPPERMINE POINT TO COPPER ISLAND

Chart 2307.

COPPERMINE POINT TO CAPE GARGANTUA.—Coppermine Point is a little over 35 miles north by west from Point Iroquois lighthouse. There is a village and wharf in a small bay just north of the point and inside Rousseau Island. Submerged cribs of an old dock, with about 2 feet (0^m6) of water over them, extend out some distance beyond the wharf and should be avoided in approaching.

10 **Light.**—On the bluff at the northwest extremity of Coppermine Point is erected a white, square, wooden tower, surmounted by a red, octagonal, iron lantern, which from an elevation of 61 feet (18^m6) exhibits a *flashing white* light, visible 15 (13 nautical) miles.

Coppermine Rock, 27 feet (8^m2) high, lies 294°, distant 750 yards (685^m8) from Coppermine Point lighthouse. It is clean on the north and east sides, but shoal water makes out in a southeast by south direction 175 yards (160^m0) to a small dry rock, and in the same direction 400 yards (365^m8) a small spot with 7 feet (2^m1) least water over it will be found.

20 Another shoal, with 13 feet (4^m0) least water over it, lies 550 yards (502^m9) northwestward of Coppermine Rock.

Anti-aircraft gunnery range.—An anti-aircraft gunnery range has been established north of Coppermine Point with the following limits:

The danger area extends outwards into Lake Superior for a distance of 25,000 yards (7,620^m0) in an arc from 260° to 340° from the given point in Lat. 25 47° 03' 24" N., Long. 84° 45' 45" W.

Firing will take place over a twenty-four hour schedule.

Mariners are warned that they must not enter this danger area while firing is in progress.

30 **Hibbard Bay** is situated 2¼ miles north of Coppermine Point, the shore between being badly broken up and fronted by reefs lying from 200 to 300 yards (182^m9 to 274^m3) offshore but beyond which the water is good. Hibbard Bay is shallow for 300 yards (274^m3) from shore, and the bottom of the bay is hard.

Hibbard Rock, 12 feet (3^m7) above water, lies southwest almost one mile from Mamainse Point. With the exception of a shoal close southward, it is 35 good water about it, and a deep passage 500 yards (457^m2) wide separates it from the bank off Mamainse Point.

Mamainse Point, about one mile north-northwest from Hibbard Bay and about 3½ miles north of Coppermine Point, is badly broken up into several small islands. A bank extends offshore a quarter of a mile at this point to 18 feet (5^m5) 40 of water, but half-way to Hibbard Bay, it is over half a mile off, abreast Hibbard Rock.

Chart 2307.

Mamainse Harbour is formed by a string of islands immediately north of Mamainse Point. The northern entrance has been dredged to a depth of 5 feet (1^m5) over a width of 40 feet (12^m2). The Government wharf has a pierhead 116 feet (35^m4) long with a depth of 6 feet (1^m8) along the face. Great care should be exercised in entering the harbour by those not entirely familiar with the locality. There is no entrance from the south. 5

Directions.—Course should be set for a point about one-quarter of a mile off the northern end of Mamainse Island. The shelter behind the islands then opens up, and the entrance to the channel will be seen lying between the mainland and a low, sparsely wooded island immediately east of Mamainse Island. A shoal extends northward from this inner island and may be crossed in a depth of 10 feet (3^m0), at a point about 350 feet (106^m7) north of the Government wharf. A second shoal, parallel to the outer shoal, runs northward from a low, rocky point close northward of the wharf, the channel lies between these two shoals. The harbour should be entered with extreme caution and should not be entered during a northeast wind. 10 15

Light.—On the north point of the largest island off Mamainse Point, a *fixed red* light is shown, at an elevation of 33 feet (10^m1) from a lantern on a pole.

Fog-signal.—A fog-horn, operated by hand, will answer signals from vessels. 20

The light and fog-signal are maintained privately.

Rousseau Bank, with an area of 2 miles north and south by one mile across, with depths of under 10 fathoms (18^m3), has its shoalest part of 5 fathoms (9^m1) near the north end, bearing 263°, distant 5 miles from Mamainse Point. 25

From Mamainse Point, the shore trends in a general northeasterly direction 6 miles to the head of Mica Bay and is quite free from outstanding shoals.

Mica Bay is a slight indentation in the coastline and quite open. A depth of 8 fathoms (14^m6) will be found 300 yards (274^m3) offshore. Beyond this point the water is very deep. 30

Pointe aux Mines lies 2 miles northwestward of Mica Bay. This stretch of shore has a few dry rocks along the shore with very deep water immediately outside. Point aux Mines is steep-to, 95 fathoms (173^m7) being found about 300 yards (274^m3) off the point.

Mica Shoal, composed of boulders with 15 feet (4^m6) of water over them, is the most dangerous reef on the east coast. It is about half a mile long, north and south, and lies 7³/₄ miles, 343°, from Coppermine Point lighthouse. 35

Clearing mark.—To pass east of this shoal keep Coppermine Point lighthouse in line with the west side of Rousseau Island, bearing 156¹/₂°.

Buoy.—A spar buoy, marked with red and black horizontal stripes, is moored on the western edge of the shoalest part of this danger. 40

Siesta Shoal, with 25 feet (7^m6) least water on it, lies a little over 5¹/₂ miles west from Point aux Mines.

Alona Bay.—The shore continues steep-to for a mile past Pointe aux Mines, where a shallow bank makes out 200 yards (182^m9) offshore, and continues along the head of Alona Bay to the south side of Theano Point, where it becomes steep-to again. 45

Chart 2307.

Anchorage, which is very limited along this shore, may be found in Alona Bay off the south side of Theano Point, in from 12 to 15 fathoms (21^m9 to 27^m4), over mud bottom.

- 5 **Ossifrage Island**, 44 feet (13^m4) high, lies about one-third of a mile south from the extreme of Theano Point. The water about this island is good, but, the passage between it and Theano Point, is obstructed by a shoal, with 9 feet (2^m7) of water over it.

- 10 **Theano Point**, 3 miles north-northeast from Pointe aux Mines, is steep-to, with the exception of the shoal north of Ossifrage Island referred to above.

MONTREAL RIVER.—From Theano Point, the shore trends in a north-northeasterly direction for about 5 miles to the mouth of the Montreal River. This stretch of shore is a series of slight bays and steep-to points; the bays having a narrow fringe of shallow water off their shores.

- 15 Montreal River is the terminus of Highway 17 and is the site of a large hydro-electric power plant. It is a tourist resort and shipping point for commercial fishermen. Diesel oil and gasoline are available. There is a general store.

- 20 The settlement provides one of the best shelters for small craft on the east coast of the lake.

- The river enters the lake between two rocky points about 100 feet (30^m5) high, which form a small bay. The head of the bay is lined with a shingle beach through which the river flows into the lake. The river channel is about 100 feet (30^m5) wide and has a depth of 5 feet (1^m5) at the entrance between the 25 shingle beaches. A shoal spit with a depth of one foot (0^m3) on it, and on which the sea breaks, extends westward for about 225 feet (68^m6) from the northern entrance point of the river. A boat basin lies on the southern side of the river just inside the entrance. In the basin is a Government wharf, consisting of four crib structures, each 10 feet (3^m0) wide and projecting about 40 feet (12^m2) from 30 the shore, with a depth of about 6 feet (1^m8) at the outer end. On the eastern side of the basin is a small fuelling wharf.

The river is obstructed by rapids and a power station about 200 yards (182^m9) from the entrance.

- 35 **Lights.**—A *fixed white* light, visible 10 miles, is exhibited, at an elevation of 130 feet (39^m6), from the rocky point on the southern side of the small bay into which the Montreal River flows.

A *fixed white* light, visible 2 miles, is exhibited, at an elevation of 30 feet (9^m1), at the southern side of the entrance to the Montreal River.

- 40 **Montreal Shoal** consists of two patches, each about 600 yards (548^m6) across, under a depth of 18 feet (5^m5), and the whole bank, under a depth of 5 fathoms (9^m1), extends about 1½ miles north and south and three-quarters of a mile across. The northern patch has a least depth, over it, of 7 feet (2^m1), half a mile from the northern extreme, which bears 164½° distant 3½ miles from the southwest point of Montreal Island. The southern patch has a least depth 45 of 10 feet (3^m0).

Clearing mark.—The west side of Barrett Island in line with the northeast point of Montreal Island, bearing 001°, passes close eastward of Montreal Shoal.

Chart 2307.

From Montreal River, the shore trends in a general northeasterly direction 4 miles, thence northerly about one mile to MacGregor Cove. For a mile past Montreal River a slight bank makes off, and anchorage may be found a quarter of a mile offshore in 7 fathoms (12^m8) but the remainder of the shore to the northeastward is steep-to and much too deep for anchoring. 5

MacGregor Cove is the easternmost bay of this section of the shore. It affords anchorage in from 10 to 12 fathoms (18^m3 to 21^m9) over, sand bottom.

Vrooman Islands, two in number, the larger and higher of which is 37 feet (11^m3) high, have good water about them, with the exception of a 15-foot (4^m6) spot a short distance west of the northwest and smaller island. A deep channel, about 300 yards (274^m3) wide, exists between Vrooman Islands and the main shore at the northwest point of MacGregor Cove. In this, fairly good anchorage may be had. 10

Agawa Bay.—From MacGregor Cove the shore trends in a general north-northwest direction $4\frac{3}{4}$ miles to the head of Agawa Bay and is fringed with shallow water from one-eighth to one-quarter of a mile off. Agawa Bay is an open indentation a little over a mile wide at the mouth. It has clean sandy shores and good anchorage with fair shelter may be had. 15

Agawa River, at the southeastern part of Agawa Bay, is 50 feet (15^m2) wide at the mouth and 4 feet (1^m2) of water may be carried in. 20

Agawa Islands are a group of small islands lying off the west entrance point of Agawa Bay. The largest island, about the middle of the group, is 600 yards (548^m6) long northwest and southeast and half that distance across and 161 feet (49^m1) high. Its southeastern point lies west three-quarters of a mile from the west entrance point to Agawa Bay. The islands are for the most part clean and free from shoals, everything being visible, with the exception of a spot, with 7 feet (2^m1) least water, which lies 700 yards (640^m1) southeast by east from the southeast end of the largest island. 25

Ganley Islands are a small group of islands that lie near to and parallel to the mainland, and lie close northeastward of the Agawa Islands. The two groups are separated by a deep channel about 1,000 feet (304^m8) wide. Good shelter for small craft may be found in the channel between Ganley Islands and the mainland, and may be entered from the north or south, but preferably from the north. Good anchorage with excellent shelter from westerly winds may be found, in a depth of 15 to 20 feet (4^m6 to 6^m1) off the southern Gangley Island. 30 35

Montreal Island, of square shape, is about $1\frac{3}{4}$ miles long east and west and also north and south. The southwest extreme bears north by west, distant $8\frac{1}{2}$ miles from Theano Point. The island is completely surrounded by a narrow shallow bank extending off 100 yards (91^m4) on the north side and one-quarter of a mile from the remainder of the island. 40

A shoal, with 18 feet (5^m5) least water over it, lies 600 yards (548^m6) southwest by south from the southwest point of Montreal Island.

Griffon Reef, with less than 6 feet (1^m8) of water on it at the northern edge, is 400 yards (365^m8) across, under a depth of 18 feet (5^m5). The shoalest spot bears north almost two miles from the northwest point of Montreal Island. 45

Clearing marks.—Theano Point in line with the southwest point of Montreal Island, bearing $166\frac{1}{2}^\circ$, clears this danger to the westward by about one-

Chart 2307.

third of a mile. The storehouse (if still standing) at Agawa River, in line with the north side of the southern Agawa Island, bearing 093° , passes 100 yards (91^m4) to the north of the shoal.

- 5 **Sinclair Island and Cove.**—North-northwest $1\frac{1}{4}$ miles from the largest Agawa Island is a small bay, called Sinclair Cove, with Sinclair Island off the entrance, affording good shelter for small craft.

10 **Barrett Island**, steep-to on the western side and shoal to the east and south for 200 yards (182^m9), is 61 feet (18^m6) high, and lies about three-quarters of a mile north of Sinclair Island.

From inside Barrett Island, the main shore trends in a general northwesterly direction 8 miles to **Bald Head**, a conspicuous white bluff 450 feet (137^m1) high.

15 **Ganley Rock**, with 19 feet (5^m8) least water, lies east by south 3 miles from the south extreme of the southern large Lizard Island and 2 miles off the main shore.

A shoal, with 22 feet (6^m7) of water, lies half a mile west-southwest of Ganley Rock; a mile southwest of the same rock, 27 feet (8^m2) of water will be found.

20 **Lizard Islands**, seven in number, form a low group $2\frac{3}{4}$ miles long in a north-northeast and south-southwest direction by three-quarters of a mile wide, and lie about $6\frac{1}{2}$ miles north-northwest from Montreal Island. The islands are surrounded by a shallow bank, which extends off a quarter of a mile to the north, and rather more to the eastward, off **Rowe Island**, the north Lizard Island, and about half a mile to the south of **South Lizard Island** and a mile to the westward.

25 **Barr Reef**, with less than 6 feet (1^m8) of water over it, lies west-southwest $1\frac{1}{2}$ miles from the northwest point of Rowe Island. A short distance west of this reef the water is good.

Light.—A *flashing white* is exhibited, at an elevation of 28 feet (8^m5), from a mast with a white daymark, on the northeastern point of Rowe Island.

30 **Minnie Reef**, with 9 feet (2^m7) of water over it, lies one mile west by south from South Lizard Island. The group is separated from the main shore by a passage one mile wide with 20 fathoms (36^m6) of water.

35 **Clearing mark.**—To clear the Lizard Islands to the southwestward, bring the west side of Hursley Island in line with the northeast point of Leach Island, bearing 327° .

40 **Leach Island**, 5 miles west-northwest of the Lizard Islands, and 3 miles offshore, is $2\frac{1}{4}$ miles long north-northeast and south-southwest and $1\frac{1}{4}$ miles across. Shoal water surrounds the island extending a quarter of a mile on all sides, with the exception of the south point, where a dangerous reef makes out southwest 760 yards (695^m0) to a depth of 6 feet (1^m8). Also south by east, 600 yards (548^m6) from the same point, 3 feet (0^m9) of water will be found. A short distance outside these spots the water is good.

Miron Bank, $1\frac{3}{4}$ miles southwest by south from the south point of Leach Island, has a least depth of 5 fathoms (9^m1).

45 **Sparrow Shoal**, a very dangerous outstanding shoal, with 13 feet (4^m0) least water, bears west $1\frac{1}{2}$ miles from the middle of the west side of Leach Island. This spot is quite small, with good water around it. About midway between this shoal and Leach Island, a depth of 24 feet (7^m3) will be found. However, a depth of 7 or 8 fathoms (12^m8 or 14^m6) may be carried through between this spot
50 and Sparrow Shoal.

Chart 2307.

Clearing marks.—To pass half a mile north of Sparrow Shoal, keep the summit of Bald Head in line with the north point of Leach Island, bearing 083°.

Also the northeast point of Montreal Island in line with the south point of Leach Island, bearing 127°, passes 200 yards (182^m9) to the southwestward of this danger. 5

Ella Islet, small and 6 feet (1^m8) high, lies about one mile northward of Leach Island. It is surrounded by an extensive shoal. A channel about half a mile wide, with a least depth of 12 fathoms (21^m9) in it, lies between Leach Island and Ella Islet. 10

From Bald Head, the shore trends in a general northwest by west direction 7 $\frac{3}{4}$ miles to the south entrance point of the bay outside Gargantua Harbour. For the most part the water is good along this stretch of coast and, although there are a few shoals, they are near the shore and nothing will be found 200 yards (182^m9) off. 15

Beatty Cove, 3 miles northwestward of Bald Head, is very small and fit only for small craft.

Telegraph Rock, about 50 yards (45^m7) in diameter, 7 feet (2^m1) high and steep-to on all sides, is less than half a mile west of the west entrance point of Beatty Cove. 20

Chart 2305.

Gargantua Harbour lies about 4 miles southeast from Cape Gargantua and 90 miles from Sault Ste. Marie. The harbour is easy of approach being distinguished by a lighthouse on a small island off the entrance.

Gargantua Island, 300 yards (274^m3) long and half that distance across, lies 300 yards (274^m3) southeast from the southwest entrance point, providing extra protection to the harbour, and dividing the entrance into two passages. This island has good water about it, with the exception of a rock, with 5 feet (1^m5) of water over it, which lies 200 yards (182^m9) off the middle of the west side, and another rock, with 5 feet (1^m5) of water over it, which lies 300 yards (274^m3) westward from the extreme of the west entrance point of the harbour. 25 30

Gargantua light.—On the summit of Gargantua Island, 160 feet (48^m8) from the south extremity, a *flashing white* light (*Lat.* 47° 33' N., *Long.* 84° 58' W.) is exhibited, at an elevation of 72 feet (21^m9), from a skeleton steel tower, 11 feet (3^m4) high. 35

Wharf.—On the southwest side of the harbour is a Government wharf 137 feet (41^m8) long and extending to a depth of 15 feet (4^m6).

Directions.—The harbour may be entered either north or south of the island but the latter is much the better being quite free from shoals. Entering by the south channel, the south point of Gargantua Island, which is steep-to, can be rounded at a distance of 100 yards (91^m4) until inside it when the wharves and buildings near the head of the harbour are seen. The former may then be steered for giving the west shore a berth of 50 yards (45^m7). There is a good passage north of the island, by taking mid-channel and heading 048°, to clear the rocks described above. It should not be attempted in thick weather or at night. 40 45

Anchorage for large vessels with fair shelter may be had behind the island, in from 7 to 10 fathoms (12^m8 to 18^m3) over sand bottom, or small craft may proceed farther up into the harbour and come to in from 5 to 8 fathoms (9^m1 to 14^m6) over mud bottom.

Chart 2309.

Cape Gargantua to Michipicoten Harbour.—**Cape Gargantua**, though rising to a height of 270 feet (82^m3), is not particularly prominent except from the south. It is 44 miles northwest of Coppermine Point. From here, the coast
5 trends in a general north-northeast direction 25 miles to Michipicoten Harbour.

Between Gargantua Harbour and the cape, the shore is fringed by islands and shoals, the southernmost and largest island being Devils Warehouse, and the northern one of the group, Hursley Island.

A good channel exists between the islands and the mainland, with plenty
10 of water, but as there are several unmarked dangers it should not be attempted without local knowledge.

Warp Bay.—From Gargantua Harbour, the shore trends in a general north-west direction 2½ miles to Warp Bay, the entrance to which is filled up with islands and shoals, providing good shelter and limited anchorage in 7 fathoms
15 (12^m8) of water, over mud bottom. It can be entered from the above channel or from the lake, by steering 040°, heading on the bold point which forms the southwest entrance point of the bay, between Pearson Island on the port hand, and Alexander Reef, one foot (0^m3) high, and the dry rocks and shoals off Devils Warehouse Island, to starboard. When rounding the southwest entrance point
20 care must be taken to avoid **Wadena Shoal**, with 9 feet (2^m7) least water over it, and lying 250 yards (228^m6) east of the point.

Devils Warehouse Island, the largest and most southerly of the group with its southeast point bearing west-northwest 1¾ miles from Gargantua light-house is 950 yards (868^m6) long northward by 600 yards (548^m6) across and 170
25 feet (51^m8) high. It is easily distinguished by its high, steep, eastern side.

Jordon Island, 300 yards (274^m3) long and 14 feet (4^m3) high, lies south-eastward about half a mile from Hursley Island.

Pannikin Shoal, with 15 feet (4^m6) least water, the only detached shoal outside the line of the islands in this locality, bears south, three-quarters of a mile
30 from the southeast point of Hursley Island. This shoal is steep-to to the north-east and southwestward, but 19 feet (5^m8) will be found about 200 yards (182^m9) to the northwestward.

Hursley Island, the northwestern of the group of islands off Cape Gargantua is a third of a mile long and 200 yards (182^m9) across and 25 feet (7^m6) high.
35 The island has two small summits, which give it the appearance of two islands from a distance.

Shoal water extends off 200 yards (182^m9) to the southwestward and 400 yards (365^m8) to the southeastward. Otherwise the island is clean.

Light.—A *flashing white* light (Lat. 47° 36' N., Long. 85° 03' W.) is exhibited,
40 at an elevation of 38 feet (11^m6), from a steel tower with white daymark, on the northwestern side of Hursley Island.

Lying half a mile north of Hursley Island and 2 cables off Cape Gargantua is a group of dry rocks, the largest one being 10 feet (3^m0) high. They have deep water about them, 30 fathoms (54^m9) being found 2 cables to the westward.

Cape Rock, a small rock having two summits, with 8 feet (2^m4) least water
45 over them, lies 2½ cables north from Cape Gargantua. A depth of from 6 to 10 fathoms (11^m0 to 18^m3) will be found between this rock and the cape.

Chart 2309.

Indian Harbour.—From Cape Gargantua, the shoreline trends eastward for one mile to the northwest entrance point of Indian Harbour, which is situated in the southeast corner of a bay fronted by numerous islands, the most southerly of which is Chalfant, and the most northerly, Squaw Island. 5

Directions.—To enter Indian Harbour, it should be approached on a south-east by east course, heading in the gap between Chalfant Island and the bluff point just south of it (the northwest entrance point to the harbour). Keep this point close aboard, and haul sharply round it to starboard, to avoid a rock, almost awash, and three-quarters of a cable east of the point. There is a depth 10 of 9 fathoms (16^m5) between this rock and the point. Two bays will be seen ahead separated by a group of small islands. Keep these on the port hand, and proceed in mid-channel between them and the west shore, until past the islands, when come to anchor in the middle of the harbour in 5 fathoms (9^m1). Though 15 restricted in area, the harbour affords perfect shelter from all winds.

Squaw Island, 100 yards (91^m4) square and 15 feet (4^m6) high, is separated from **Ryan Point** by a shallow channel only 70 yards (64^m0) in width. It is $1\frac{3}{4}$ miles north of Cape Gargantua.

Between Cape Gargantua and Michipicoten Harbour, a distance of 25 miles, the only two promontories worthy of note are Cape Chaillon and Brulé 20 Point.

There are no outlying dangers off this section of the coast, but the open bays afford little or no protection, with the exception of Brulé Harbour. From Brulé Point north to Michipicoten Bay 50 to 60 fathoms (91^m4 to 109^m7) will be found close in, and there is no anchorage. 25

Cape Chaillon, 7 miles northward of Cape Gargantua, is easily distinguished from the southward by its bold, well defined bluff rising in a series of short steps from the lake to nearly 200 feet (61^m0), however, from the westward its definition is lost against the higher hills in the background. From Ryan Point, the coast forms an open deep bay about a mile and a half inside the line of the points. 30 Cape Chaillon is steep-to. Thirteen fathoms (23^m8) will be found a short distance off the point, and the coast continues bold for a couple of miles to the northeast and southeast.

MacKinnon Bank, with 15 fathoms (27^m4) least water on it, lies $3\frac{1}{2}$ miles southwest from Cape Chaillon and about 2 miles off the nearest shore. The bank, 35 under 20 fathoms (36^m6), extends 2 miles in a north and south direction, by one mile across, the shoalest part being half a mile from the north extreme.

Local magnetic disturbance.—Slight disturbance of the magnetic needle has been noted on MacKinnon Bank.

Red Rock River, 2 miles southeast from Cape Chaillon, is easily recognized 40 by a conspicuous red rock, 100 feet (30^m5) high, which juts out into the lake. At this point, iron ore deposits have been located close to the coast, but it is claimed to be of a non-magnetic nature. A sand beach extends one mile south of Red Rock River.

Grindstone Point.—From Cape Chaillon, the coast trends northeastward 45 for $2\frac{1}{2}$ miles to Grindstone Point. Here the shore turns to the eastward, forming a rounding, low, gravelly point fronted by a boulder bank extending off 100 to 300 yards (91^m4 to 274^m3). The 5-fathom (9^m1) bank extends 2 cables north from the point and 12 fathoms (21^m9) will be found a cable further off. A mile

Chart 2309.

east of Grindstone Point, the shore trends almost straight in a north-northeast direction 4 miles to **Old Woman Bay**. This part of the shoreline is formed of steep cliffs, from 300 to 400 feet (91^m4 to 121^m9) high, which rise sheer from the water's edge exhibiting on their faces conspicuous blotches of red coloured rock, and having deep water close in.

Old Woman Bay is rectangular in shape, about one mile across the mouth, and extends in the same distance.

The bay is free from shoals, however, the water is deep and quite open to the westward. Old Woman River empties into the head of the bay through a gravel beach.

A small rock, one foot (0^m3) high, lies 200 yards (182^m9) south of the north-west entrance point of the bay.

Brûlé Harbour.—From Old Woman Bay, the coast trends in a general north-northwest direction for 2½ miles to Brûlé Point. This stretch of shore is indented by three bays, the middle and larger being known as Brûlé Harbour. The entrance to this harbour, with a depth of 8 fathoms (14^m6), is contracted to a width of 1½ cables, by an island in the mouth.

Entrance Island, marked by a white cross, is separated from the main shore by a narrow channel 40 yards (36^m6) wide, and may be approached quite close on the north or harbour entrance side, but 6 feet (1^m8) of water will be found half a cable off the south point.

The gap in the coastline forming the entrance to Brûlé Harbour is not easily seen, if approaching from the northwestward, but by standing in towards the high cliffs to the south of Old Woman Bay, one will open the entrance and gain a glimpse of the harbour before hauling in.

Brûlé Harbour is divided into two arms, the northern or larger one being the more conspicuous and easy of access. A depth of 32 fathoms (58^m5) will be found in the middle, however, anchorage in 13 fathoms (23^m8) may be had near the north end, with good shelter.

The south arm, with 13 fathoms (23^m8) of water, is almost landlocked, the entrance being through a gap only 50 feet (15^m2) in width with a depth of 4 fathoms (7^m3) of water. Just inside this narrow entrance, and lying 50 yards (45^m7) northeast of the southeast entrance point, is a rock with 5 feet (1^m5) of water over it.

Directions.—Passing through the gap, entering the south arm, vessels should hold their course for 100 yards (91^m4) clear of the southeast entrance point to clear the rock off this point. Then haul sharply to starboard, and anchor in the middle of the bay. The anchorage being quite limited in extent, and having a narrow and difficult approach, is recommended to small craft only.

Brûlé Point, (Lat. 47° 49' N., Long. 84° 57' W.), 8½ miles north-northeast of Cape Chaillon, is not very prominent being 100 feet (30^m5) high. However, Brûlé Hill, a couple of miles to the eastward, has an elevation of 986 feet (300^m5) and can be seen for a considerable distance. Deep water comes close in to the extreme of Brûlé Point, and a rock, with less than 6 feet (1^m8) of water on it, lies south-southeast distant 3 cables from the extreme of the point and one cable off the nearest shore.

Beauvier Point, (De Beauvais Point) 1¾ miles to the north of Brûlé Point, is a low shelving steep-to projection, with cliffs 300 feet (91^m4) high rising behind it. The shore between is bold and, from three-quarters of a mile north of Brûlé

Chart 2309.

Point, is from 150 to 200 feet (45^m7 to 61^m0) high. From Beauvier Point, the shore trends east by north 1½ miles to Noisy River, thence in a northeasterly direction 5½ miles to the head of an unimportant and deep bay, with a small creek entering it.

From this point, the shore is a sandy beach and trends northwest by north for 1½ miles to the mouth of Michipicoten River. The stretch of shore from Beauvier Point for 6 miles to the north, for the most part, is steep-to with rugged cliffs rising from 100 to 300 feet (30^m5 to 91^m4) above the water.

Michipicoten River enters the lake 3 miles southeastward of the harbour of the same name. Although a considerable volume of water passes out through its mouth, it is only navigable for light draught craft.

Two rocks, awash, lie in the middle of the mouth, which is only 500 feet (152^m4) in width.

Settlement.—About 1½ miles up the river, on the northwest bank, is situated a small settlement populated mostly by Indians. Just below the settlement on the opposite shore are the ruined buildings of the abandoned Hudson Bay Company's fur trading post. In former years this was the starting point for the 'fur brigades' that made the journey across country by lake and river to the tidal waters of James Bay.

There is power development on the river used by the iron mines in the vicinity. Sixteen miles up from its mouth, it is crossed by the main line of the Algoma Central and Hudson Bay Railway. The river and its tributaries are also used for floating timber and pulpwood to the lake where it is rafted and towed to Sault Ste. Marie.

Wharf.—At the mouth of Michipicoten River is a small Government wharf, with a depth of 14 feet (4^m3) alongside. It is exposed to heavy seas in south and southwest gales.

Michipicoten Bay.—From Michipicoten River, the shore trends in a general northerly direction for 1½ miles, thence westerly 2 miles to Michipicoten Harbour; thence southerly 1½ miles to Perkwakwia Point thus forming a square, open bay, known as Michipicoten Bay, with a harbour of the same name in the northwest corner. Thirty fathoms (54^m9) of water will be found in the bay and no outlying dangers but it is quite exposed to the south and southwest.

Chart 2305.

Michipicoten Harbour lies in the northwest corner of Michipicoten Bay and is open to the south. It is the lake terminal of the Algoma Central Railway and is an important ore shipping and coal receiving port. It is a Customs port of entry.

Wharves.—The Coal Wharf lies on the western side of the harbour and for a length of 1,300 feet (396^m2) has a least depth of 22 feet (6^m7) alongside. The Commercial Pier, about 650 feet (198^m1) long lies northeastward of the Coal Wharf and roughly parallel to it. There is a distance of 210 feet (64^m0) between the outer end of Commercial Pier and the Coal Wharf. A slip 500 feet (152^m4) long and 75 feet (22^m9) wide was dredged in 1946 to a depth of 20.5 feet (6^m2) with its westerly edge 30 feet (9^m1) east of the east side of the pier. In 1952, the above dimensions were reported to be correct. On the west side of the Commercial Pier, there is a least depth alongside of 21 feet (6^m4) for the outer 480 feet (146^m3) but a rock shoal with a depth of 20 feet (6^m1) over it, lies close southwestward of the outer end of the pier.

Chart 2305.

Leading lights.—The front light is exhibited at an elevation of 52 feet (15^m8), from a lantern on a pole on the shore north of Commercial Pier; the rear light is exhibited, at an elevation of 96 feet (29^m3) at a distance of 340 feet (103^m6), 5 350° from the front light. These *fixed red* lights, which are privately maintained, and exhibited when a vessel is expected, lead in from the lake to the Commercial Pier.

Anchorage.—In Oakes Cove, southwestward of the harbour, vessels of shallow draught will find good shelter and holding ground.

10 **Clergue Island**, a small island on the east side of the harbour, is separated from the main shore by a shallow passage, 40 yards (36^m6) in width, but 18 feet (5^m5) of water will be found a short distance off the south point.

A small island 20 feet (6^m1) high and 30 yards (27^m4) in diameter, lies close westward of Clergue Island. Shoal water extends 50 yards (45^m7) to the 15 southwestward from it. A small rock, 6 feet (1^m8) high, lies 175 yards (160^m0) south of the last mentioned island, and has shoals extending off to the east and west for 30 yards (27^m4).

Caution.—With south and southwesterly gales, heavy seas enter the harbour rendering it difficult and dangerous for deep draught vessels to approach the piers.

20 Chart 2309.

MICHIPICOTEN HARBOUR TO POINT ISACOR.—For about 19 miles from Perkwakwia Point, the shore trends due west and then for 3½ miles west-southwest to Point Isacor. Throughout this stretch the coast is unbroken, except for slight indentations about a quarter of a mile in depth. The hills, rising less 25 abruptly from the water than on the neighbouring east coast of the lake, are rounded in appearance and more uniform in height. Mountain Ash Hill, 1,100 feet (335^m3) in height and midway between Michipicoten Harbour and Point Isacor, is a good landmark from the southward. Bare Summit, north of Point Isacore though 1,264 feet (385^m3) above the lake, is not so conspicuous being 30 but a little higher than the neighbouring hills. This section of the north shore is free from outlying rocks or shoals, and over 20 fathoms (36^m6) will be found three-quarters of a mile off, with the exception of Dog Harbour, where a bank of sand and gravel brought down by the University River extends out to a depth of 18 fathoms (32^m9) at three-quarters of a mile, and the 20-fathom (36^m6) bank 35 extends out 2 miles.

In moderately hazy weather, when the shore is clearly defined, vessels may coast along this shore at a distance of one mile in perfect safety.

Perkwakwia Point is the name given to the high, bold cape, that projects for 1½ miles into the lake from the north shore, forming the west side of 40 Michipicoten Bay. The highest part, near the west shore, is 370 feet (112^m7) high, and can be seen a considerable distance from the westward. The shores are steep-to. A depth of 10 fathoms (13^m3) will be found a short distance off.

Light.—**Fog signal.**—**Radio beacon.**—A *flashing white* light every 30 45 *seconds* is exhibited, at an elevation of 70 feet (21^m3), from a white, square wooden building surmounted by a lantern, situated on the southeast extremity of Perkwakwia Point. A fog diaphone sounds 2 *blasts* every 30 *seconds*.

A radio beacon, synchronized with the fog diaphone for distance finding purposes, is operated at the lighthouse.

Chart 2309.

Oakes Cove is situated between Perkwakwia Point and Michipicoten Harbour, the north shore of the peninsula forming the south side of the cove. It is about 3 cables across the mouth and extends in about the same distance

Anchorage may be found, just within the entrance, in 18 feet (5^m5) of water over sand bottom. Light draught craft may proceed farther into the cove and obtain better shelter. 5

CAUTION.—For large vessels, good shelter from heavy southerly gales cannot be obtained anywhere in Michipicoten Bay.

Coast.—From the southwest extreme of Perkwakwia Point, the shore trends in a general north-northwest direction, for 1¼ miles, thence westerly 2 miles to **Dore Point**, thus forming what is known as **Dore Bay**. The north shore of this open bay is fronted by a group of small islands, 15 to 25 feet (4^m6 to 7^m6) high, and numerous rocks extending out, in places, to 3 cables. Near the northeast corner of the bay is a long sand beach, and here is situated an Indian mission with its little white painted church. Into the west end of the bay flows the Dore River, whose falls, several miles back, and high up in the hills, may often be seen for a considerable distance down the east shore. 10 15

University River, 13 miles west from Perkwakwia Point, is recognized by its steep valley and sand and gravel beach at the mouth. A considerable volume of water flows down in the spring, but a shifting bar across the mouth and rapids half a mile up render it unnavigable. 20 30

Dog Harbour, (*Lat. 47° 57' N., Long. 85° 13' W.*), about two-thirds of a mile west of University River is a small open bight 2 cables in length by a cable across, where, in summer months, small craft can find an anchorage in from 2 to 3 fathoms (3^m7 to 5^m5) of water. 25

Beacon.—A white beacon marks the entrance to Dog Harbour.

A cluster of small rocks, above water, lies about one cable south of the low point that forms the harbour, and 400 feet (121^m9) southeast from the end of this point is a rock, with less than 6 feet (1^m8) of water over it. To avoid this, the harbour should be approached from the eastward heading for the middle of the entrance on a 304° course. A small rock, just above water, lies inside the harbour 150 feet (45^m7) off the south shore. 30

Point Isacor, more conspicuous from the eastward, is about 150 feet (45^m7) high and steep-to. A high range of hills lies to the north of it, the highest point of which Bare Summit, 1,264 feet (385^m3) high. For 3½ miles northeast of Point Isacor, steep, rocky cliffs rise from 300 to 800 feet (91^m4 to 243^m8) above the lake and on this stretch there is no landing place for boats. 35

Michipicoten Island lies 9 miles south of a point on the mainland, 40 miles west of Michipicoten Harbour. The northeast point of the island lies 28 miles west-northwest of Cape Gargantua. It is 17 miles long by 6¼ miles wide about the middle and heavily wooded, rising to a height of 700 feet (213^m4) toward the east end and 936 feet (285^m3), at a bare outcrop of rock 1½ miles in from the northwest shore, where a United States Geodetic triangulation station is located. 40 45

Generally speaking, the north shore of the island is free from shoals until well over towards the west end, and 10 fathoms (18^m3) of water will be found less than half a mile off the shoreline, anywhere to the eastward of Quebec Rocks.

Chart 2309.

The same remark applies to the east end of the south side east of Quebec Harbour. West of this harbour, the shore is fronted by shoals and a string of islands, and dry rocks lie off the shore from three-quarters to $1\frac{1}{4}$ miles, extending from
 5 abreast the entrance to Quebec Harbour for some $6\frac{1}{2}$ miles in an almost due westerly direction, terminating in a rock, awash, known as Antelope Rock. There is a deep water passage inside these islands.

Though dry rocks extend three-quarters of a mile off the west end of the island, they are deep-to and there are no outstanding shoals beyond them.

10 During dense fog, the east end of the island, being bold and free from shoals, may be picked up from the echo of the ship's whistle, if the lighthouse fog signal cannot be heard.

Anchorage.—Large vessels will find fair shelter, from all winds, on the south side of Michipicoten Island inside Davieaux Island, in from 25 to 30 fathoms
 15 (45^m7 to 54^m9) of water, over mud bottom. The best channel to this anchorage, three-quarters of a mile in width, is between Stack and Ship Islands, the former island being steep-to. Fair sized ships will find good shelter from northwest and north winds at East Sand Bay, in $6\frac{1}{2}$ fathoms (11^m9) over sand bottom. On
 20 the north side of the island, if south or southeast gales are encountered, good shelter and holding ground will be found in the bay just west of Bonner Head, and if the wind is from the southwest, vessels should come to in the light east of the same headland, in from 5 to 10 fathoms (9^m1 to 18^m3) of water over sand bottom.

Light.—On Point Maurepas, the northeast extremity of Michipicoten Island,
 25 is erected a hexagonal, reinforced concrete tower with six flying buttresses, surmounted by a red, circular, metal lantern which, from an elevation of 84 feet (25^m6), exhibits a *group flashing, white* light showing 2 flashes every 7 seconds. The light is visible 17 miles.

Fog signal.—A fog diaphone sounds *one blast every 20 seconds*.

30 **Radio beacon.**—There is a radio beacon on Point Maurepas, the east end of Michipicoten Island.

From the northeast point of the island, the shore trends in a general south-southwest direction about $1\frac{1}{2}$ miles to the southeast point and along this stretch of coast the 18-foot (5^m5) bank extends off from 100 to 200 yards (91^m4 to 182^m9).

35 A small island, nearly round, lies $1\frac{1}{4}$ miles south of the lighthouse and a quarter of a mile offshore. This island is steep-to on the southeast side; however, 18 feet (5^m5) of water will be found 150 yards (137^m1) to the south-southwestward.

40 From the southeast point, the shore of Michipicoten Island trends in a general west by south direction for 9 miles to Quebec Harbour. This stretch of shore is broken by small bays and fronted by small islands and dry rocks, but nothing extends off more than half a mile from the nearest land.

Cozens Harbour, (*Lat. $47^{\circ} 44'$ N., Long. $85^{\circ} 37'$ W.*) about a mile west of the southeast point of the island, affords shelter for boats but is quite open to
 45 the south.

East Sand Bay, 2 miles west of Cozens Harbour, the shore between being fronted by islands and dry rocks, affords good shelter for fair sized craft from north and northwest winds. A group of dry rocks lies half a mile northeast of the south entrance point of the bay, having deep water close to their west side.
 50 The best anchorage is midway between them and the head of the bay.

Chart 2308.

A small island bears east-southeast 200 yards (182^m9) from the extreme of the south entrance point, having good water about it, with the exception of a spot with 10 feet (3^m0) least water, which lies 150 yards (137^m1) south of the island.

Another shoal, with 19 feet (5^m8) least water, bears west southwest half a mile from the same island.

A shoal, with 15 feet (4^m6) least water, bears southwest by west 1½ miles from the above island and a quarter of a mile offshore. Eighteen fathoms (32^m9) of water will be found close outside this spot.

False Harbour is a shallow, unimportant bay 4 miles west of East Sand Bay and a mile and a half east of the entrance to Quebec Harbour.

Quebec Harbour is situated on the south side of Michipicoten Island, 7 miles from the west end. It is in the shape of an "L", one bar of which represents the dredged channel and the other the harbour proper. The dredged channel is 200 feet (61^m0) in width and 19½ feet (5^m9) deep.

Leading lights.—A *fixed white* light is shown, at an elevation of 23 feet (7^m0) from a white, rectangular, wooden dwelling with the lantern in a dormer window in the roof. A similar light is shown, at an elevation of 67 feet (20^m4), from a white, square tower located 600 feet (182^m9), 000¾°, from the front light. The lights in line lead through the gap between Hope and Davieaux Islands and up the middle of the dredged channel.

Buoys.—The west side of the dredged channel is marked by three black spar buoys; the east side by three red spar buoys. The outer black spar buoy, marking an 18-foot (5^m5) spot southwestward of the east entrance point, is moored 50 feet (15^m2) west of the line of range.

A rock, with 7 feet (2^m1) of water over it, lies 225 yards (205^m8) southwestward of the east entrance point, or 100 yards (91^m4) west of the line of range.

Anchorage.—The space for anchoring is about one mile east and west, and 800 to 1,200 feet (243^m8 to 365^m8) wide, with depths from 6 to 8 fathoms (11^m0 to 14^m6) over mud bottom, and good shelter from all winds. The anchorage space is both east and west of the range lights.

This harbour is not recommended for vessels over 300 feet (91^m4) in length owing to the sharp turn from the dredged cut to the anchorage. Large vessels should anchor behind Davieaux Island.

Wharves.—On the north side of the harbour, near the east end, is a private wharf with 108-foot (32^m9) face, and with from 12 to 15 feet (3^m7 to 4^m6) of water along the face. There are three other wharves from 40 to 80 feet (12^m2 to 24^m4) long with plenty of water for small craft. Ice and groceries, etc., may be obtained. The ruins of a wharf are situated about 900 feet (274^m3) southeastward of the front leading light.

Caution.—Currents.—With strong northwesterly winds, strong easterly currents exist around the entrance to the harbour, when some or all of the buoys have been seen to disappear for a short interval of time.

Magnetic disturbance.—There is considerable magnetic disturbance, over half a point, in the channel abreast the southeast entrance point of the harbour.

From Quebec Harbour, the shore trends in a westerly direction 6 miles to the southwest point of the island. This stretch of shore, fronted by shoals and dry rocks, has a string of islands and rocks lying off from three-quarters to 1½ miles and starting at Hope Island, the most easterly of the group, and trending due

Chart 2308.

west for $6\frac{1}{2}$ miles terminating in Antelope Rock, awash. Inside or north of these islands and rocks, there is a deep water channel leading to the anchorage north of Davieaux Island or Quebec Harbour.

- 5 **Hope Island**, the most easterly of these, is about four-tenths of a mile long, east and west, and 125 yards (114^m3) across. The west end bears 169° , distant three-quarters of a mile, from the east entrance point of Quebec Harbour. The island is 80 feet (24^m4) high and wooded and, on account of a bare place in the middle, looks like two islands at a distance. Shoal water makes out from the eastern point 250 yards (228^m6) to a depth of 9 feet (2^m7). Beyond this the water is good.

- 10 Two small islands lie off the west end of Hope Island, and 175 yards (160^m0) westerly from the west one of these, 18 feet (5^m5) of water will be found. On the south side, near the east end, shoal water makes out 100 yards (91^m4). The north shore of Hope Island is steep-to.

A shoal, with 21 feet (6^m4) least water bears 103° , distant half a mile, from the east point of Hope Island.

Chart 2309.

- 20 **Davieaux Island**, (Lat. $47^\circ 42' N.$, Long. $85^\circ 49' W.$) lying west of Hope Island and separated therefrom by a channel 600 yards (548^m6) wide, is $1\frac{1}{4}$ miles long, 250 yards (228^m6) wide and 110 feet (33^m5) high. The shores of this island are steep-to on all sides.

- 25 **Light**.—On the summit of Davieaux Island, is erected a white, reinforced, concrete octagonal tower surmounted by a red lantern which, from an elevation of 129 feet (39^m3), exhibits a *group flashing white light giving 4 flashes every 24 seconds*. The light is visible 20 (17 nautical) miles.

Beacon.—There is a white beacon at the station.

- 30 **Fog-signal**.—A hand fog-horn, situated in a small, red, wooden building about 300 feet (91^m4) west from the east extreme of the island answers vessel's signals.

Stack Island, 84 feet (25^m6) high, lies northwest of the western extreme of Davieaux Island and is separated from it by a narrow channel. The shores are steep-to, with the exception of a shoal that makes out from the eastern end for 200 yards (182^m9) to a depth of 23 feet (7^m0).

- 35 **Ship Island**, lies about a mile west of Stack Island and between these islands lies the main channel entering the anchorage behind Davieaux Island.

A shoal, with 9 feet (2^m7) least water, makes out in a west by north direction for 750 yards (685^m8) from the west end of Ship Island.

- 40 **Green Island** is two-thirds of a mile west of Ship Island. The north, east, and south sides are steep-to.

- 45 **The Breeders**.—From the west end of Green Island, a string of small islands, rocks and shoals almost deep-to on the north and south sides, known as The Breeders, makes out 2 miles to the westward, terminating with Antelope Rock bearing 272° , distant $5\frac{1}{4}$ miles, from Davieaux Island light, and $1\frac{1}{4}$ miles off the south shore of Michipicoten Island. This rock is awash, of small extent, and deep water about it except to the eastward.

Chart 2309.

Black Rock, consisting of two small dry rocks, lies 4 miles, 280° , from Davieaux Island light. The eastern rock, the higher of the two, is about 4 feet (1^m2) in height, bare, round, smooth, and of a dark colour.

A rock, with less than 6 feet (1^m8) of water over it, lies 100 yards (91^m4) north of Black Rock. 5

A shoal, with 24 feet (7^m3) least water, bears 140° , distant 600 yards (548^m6) from the west dry of Black Rock. This shoal narrows the deep water channel to a quarter of a mile at this point, however, The Breeders are steep-to and may be kept close aboard. 10

A rock, with less than 6 feet (1^m8) of water, bears $094\frac{1}{2}^\circ$, distant 1,150 yards ($1,051^m6$) from the same spot.

A shoal, 600 yards (548^m6) long, east and west, and with two spots under 6 feet (1^m8), lies with its western end bearing 023° , distant 400 yards (365^m8) from the same spot. 15

West Sand Bay.—From Quebec Harbour, the shore trends in a general west by south direction for about 2 miles to the entrance to West Sand Bay. This stretch of shore is steep-to. The bay is a shallow indentation in the shore.

From West Sand Bay, the shore trends in a general westerly direction 5 miles to the west end of Michipicoten Island. Along this stretch of shore the 18-foot (5^m5) bank is quite wide, making out 500 yards (457^m2) in places, and beyond, dry rocks and shoals extend out about half a mile. 20

A small island bears 280° , distant 2 miles, from Black Rock and one-third of a mile off Michipicoten Island. Shoal water makes off about 100 yards (91^m4) on all sides. 25

A spot, with 6 feet (1^m8) of water over it, lies 350 yards (320^m0) east by south from the east end of this island.

Directions for entering the channel inside Antelope Rock and The Breeders from the westward.—Bring Davieaux Island light about 300 yards (274^m3) open to the northward of The Breeders and steer for the former heading 095° . Hold this course until past Ship Island, when haul up for the anchorage behind Davieaux Island, or continue on until the Quebec Harbour leading lights are in one, if bound for the harbour. 30

Cotton Cove (Lat. $47^\circ 43' N.$, Long. $85^\circ 57' W.$) is a small, unimportant bay at the southwest corner of Michipicoten Island suitable for small craft in easterly weather. 35

Light.—A *flashing white* light is exhibited, at an elevation of 30 feet (9^m1), from a wooden tower with white daymark on the small island south of Cotton Cove, off the southwest end of Michipicoten Island.

Schafer Bay is another small bay about a mile north of Cotton Cove. The coast between is broken up and fronted by shoals and dry rocks, which extend out $2\frac{1}{2}$ cables, but beyond which the water is deep. 40

Anchorage for small craft, in from 5 to 10 fathoms (9^m1 to 18^m3) over good holding ground, may be had in Schafer Bay but it is exposed to westerly winds.

From the north entrance point of Schafer Bay, shoal water makes out in a northwest by west direction for 3 cables, terminating in dry rocks beyond which there are two dry rocks, 2 feet (0^m6) high, with deep water between. The first lies $1\frac{1}{2}$ cables west of the extreme of the shoal and the other 2 cables to the north. 45

Chart 2309.

The former is deep-to and the latter has shoal water extending half a cable to the westward. These dry rocks are the most outstanding off the west end of Michipicoten Island and beyond them the water is deep.

- 5 From Schafer Bay, the northwest shore extends in a general northeast direction for 6 miles to the northwest point of the island and for the most part is fronted by a shallow bank with dry rocks extending off from one to 3 cables.

- Quebec Mines** are located near the northwest shore, a little over 2 miles from the west end of the island. They consist of a group of buildings and mine
10 shaft from which considerable copper ore has been taken; however, they are now abandoned.

- From the offing, the mouth of a good-sized prospect tunnel can be seen in the side of the cliff, rising abruptly from the shore, a short distance southwestward of the southwesternmost building of the mines, or 2 miles northeastward
15 of the northern outer dry rock off Schafer Bay.

Quebec Rocks, of which the most dangerous one is awash, lie off the shore abreast Quebec mines at distances of 2 to $2\frac{3}{4}$ miles from the northern outer dry rocks off Schafer Bay. They are the following:

- A group of dry and sunken rocks lies abreast the mouth of the above-
20 mentioned tunnel. The outer rock of this group is 2 feet (0^m6) high, bears about north-northwest from the mouth of the tunnel, and is distant 300 yards (274^m3) from the shore, to which it is connected by shoal water. Close northward the water is deep.

- A small rock, with 12 feet (3^m7) of water over it, lies 600 yards (548^m6) west
25 by north from the same tunnel, with deep water on all sides.

A shoal, 200 yards (182^m9) long, the northeastern part of which is awash, and with less than 6 feet (1^m8) of water over its southwestern part, lies 850 yards (777^m2) northwest of the tunnel, with deep water close to it on all sides.

- Another shoal, having 23 feet (7^m0) least water over it, lies nearly a mile
30 northwest by north from the mouth of the tunnel.

- A group of dry rocks, about 2 feet (0^m6) in height, lies 350 yards (320^m0) northwest of the Quebec Mines point which is situated half a mile northeast of the mouth of the tunnel mentioned above. This group of the Quebec Rocks spreads 200 yards (182^m9) northeastward and southwestward; very close outward
35 of it, the water is deep, and midway between it and the shore the least water is 15 feet (4^m6).

- Good landing could be effected on the fine gravel beach southward of the last group, the water being good between it and the other Quebec Rocks westward. The 3-fathom (5^m5) line approaches this beach to less than 100 yards
40 (91^m4).

- A small rock, 2 feet (0^m6) high, lies one mile northeastward of the point abreast of the last described group of dry rocks, and 250 yards (228^m6) offshore. Another rock, with less than 6 feet (1^m8) of water over it, lies 250 yards (228^m6) offshore, one-third of a mile farther northeastward. Both lie near the outer
45 extreme of the 3-fathom (5^m5) bank. A short distance outward, the bank drops suddenly to deep water.

This western part of Michipicoten Island should receive a berth of $1\frac{1}{2}$ miles at least. The shoals crop up so suddenly that the lead is of little use.

- Bonner Head.**—From the northwest point of the island, the shoreline trends
50 in a general easterly direction for 5 miles to Bonner Head being almost deep-to and no outstanding shoal. Bonner Head is bold and conspicuous rising abruptly

Chart 2309.

to a height of some 700 feet (213^m4) about 150 yards (137^m1) back from the shore-line. From Bonner Head, the north shore of the island trends in a general east-southeast direction for 7 miles to the lighthouse, the shore between being fronted by an 18-foot (5^m5) bank about 200 yards (182^m9) in width, and no outstanding shoals. 5

The water is deep and anchorage is scarce except in the bay east of Bonner Head referred to before.

Chart 2310.

Caribou Island, the summit of which lies 21 miles due south from Davieaux Island or 57 miles northwest from Whitefish Point lighthouse, is 3½ miles long, north and south, and has a maximum width of 1½ miles, tapering to a sharp point to the north and more rounding at the south extremity. 10

The island is chiefly composed of gravel and sand and wooded with birch, spruce, and balsam along the eastern portion. The northern part is low and sparsely wooded, the north point being low, sandy and very difficult to distinguish at any distance. About half-way down the island, the land begins to rise and, with timber much heavier, attains an altitude of 120 feet (36^m6) to tops of trees about three-quarters of a mile from the south point and a quarter of a mile from the east shore. The south point is low and sandy, but a short distance back the land begins to rise and is heavily wooded forming a bluff point. The western half of the island is low and swampy. 15 20

Speaking generally, 30 feet (9^m1) of water will be found by giving the island a berth of one mile to the eastward, southward and westward and 1½ miles to the southwest and northward. The east shore is fringed with shoal water for about a quarter of a mile off. The south point has very shoal water extending a distance of 4 cables to the southward, and 30 feet (9^m1) of water will be found 2 cables farther off. A small island lies on this shoal bank about a cable from the point. To the westward, the 3-fathom (5^m5) bank extends out one mile including Lighthouse Island, which lies three-quarters of a mile west from the same point. 25 30

Lighthouse Island, small and composed of granite boulders and about 6 feet (1^m8) high, lies 1,500 yards (1,371^m6) west of the south point of Caribou Island. From this island, a shallow bank, with less than 6 feet (1^m8) of water, extends 3 cables to the north. To the west and south of the island the bank, under 18 feet (5^m5) of water, extends 2¾ cables and to the southwest it extends 4 cables. 35

Light.—About the middle of Lighthouse Island (*Lat.* 47° 20' N., *Long.* 85° 50' W.), is erected a hexagonal, reinforced concrete structure, surmounted by a red, circular, metal lantern which, from an elevation of 99 feet (30^m2), exhibits a *group flashing white light*, showing *three flashes every 10 seconds*. The light is visible 17 miles. Radar reflectors are mounted around the top of the tower. 40

Fog signal.—A diaphone, sounds a blast of 2 seconds every 30 seconds.

Radio beacon.—A radio beacon, synchronized with the fog diaphone for distance finding purposes, is located at the lighthouse. 45

A spot, with 16 feet (4^m9) least water, bears 212°, distant 5½ cables from the lighthouse.

Along the northwest shore of the island, the shallow bank extends out from 2 to 3 cables until the north point is reached, where the bank extends 4 cables to the northward. 50

Chart 2310.

Southeast Bank consists of two patches with 14 and 15 fathoms (25^m6 and 27^m4) over them, and separated by a narrow channel over 20 fathoms (36^m6) in depth. The north patch lies 6 miles south-southeast of Caribou Island light.

- 5 **Southwest Bank** lies, with its shoalest part of 6½ fathoms (11^m9) over boulder bottom, southwest 10½ miles from Caribou Island lighthouse. From the shoalest part, the bank under 10 fathoms (18^m3), extends 1½ miles northeast, 1¼ miles to the northwest and one mile to the southeast and southwest.

10 **West Patch**, with 8 fathoms (14^m6) least water, lies 10 miles westward of Caribou lighthouse.

West Banks consist of two separate patches, the north, or larger, with a spot of 7 fathoms (12^m8), lies northwestward distant 4 miles from the lighthouse. The south patch, with 17 fathoms (31^m1) of water lies 1½ miles to the southward.

- 15 The International Boundary, bearing 302°, and passing 2¼ miles southwest of Caribou Island, passes over the southern part of this southern patch. Southeast Bank, Southwest Bank, and West Patch are in United States waters.

Northwest Bank, the southern patch of which, with 13 fathoms (23^m8) least water, lies 10 miles northwestward of Caribou Island lighthouse. The northern patch with 13 fathoms (23^m8) of water lies 2 miles to the northward.

- 20 **Chummy Bank**, with 8 fathoms (14^m6) least water, lies 15 miles north by west of Caribou Island lighthouse.

A spot, with 27 feet (8^m2) least water, lies 1½ miles northeastward of the north point of Caribou Island. From the north point of Caribou Island, the bank, under 10 fathoms (18^m3) extends about 5 miles to the northward.

- 25 **North Bank**, towards the north extreme of the 10-fathom (18^m3) bank, has a depth of 6 fathoms (11^m0).

McMillan Bank, with 16 fathoms (29^m3) of water, lies 7½ miles north of the same island.

- 30 **The Hummock**, with 14 fathoms (25^m6) of water, lies 6 miles farther in the same direction.

Butch Bank, with 20 fathoms (36^m6) least water, lies 15½ miles northwest of the north point of Caribou Island.

- 35 It has been the custom to give Caribou Island a wide berth to the southward, whereas a captain should lay off his course to pass 2 miles to the southward, or keep off the 20-fathom (36^m6) bank in thick weather.

Deepest sounding.—The deepest recorded sounding obtained in Lake Superior, namely, 1,302 feet (396^m8) lies 310°, distant 14 miles, from Caribou Island light, and just outside the western edge of the main Caribou Island Bank.

Chart 2309.

POINT ISACOR TO OTTER HEAD.—From Point Isacor, the shore trends in a general westerly direction for a distance of 11 miles. Thence it bends gradually to the north for another 11 miles forming a rounding point until a northwesterly direction is attained and which is held for a further 11 miles to Otter Island. 5

This stretch, though broken up by numerous small indentations, and fronted by many small islands, does not afford shelter for anything but small craft. For the most part the shore is bold, having no outstanding shoals, and it may be approached to within half a mile from the nearest island. It was originally heavily wooded but having been burnt over, second growth poplar, birch, and spruce will now be found. Back a mile or so from the shoreline, though the hills attain an elevation of over 800 feet (243^m8) there are no points showing prominently above the surrounding country. 10

Pilot Harbour, 9 miles west of Point Isacor, offers perfect shelter to small craft. The surveying steamer *Bayfield* frequently made fast to an old wharf, just inside the west entrance point. There is a stone cairn, painted white, on the west entrance point of the harbour. 15

Pipe River lies one and a half miles southeast of Ganley Harbour. Its entrance is shallow, but it provides temporary shelter for small craft. It is situated in the area between the large centre island and the mainland. The entrance is from the eastward, keeping to the north of the easternmost island, and steering mid-channel between it and the point on which there is a trapper's cabin and old chimneys. This anchorage is, however, not recommended as it affords little swinging room when at anchor and is open to the southeast. **Pipe Harbour** lies three quarters of a mile above the entrance to the river. 20 25

Ganley Harbour, (Lat. 47° 56' N., Long. 85° 43' W.) 6 miles west of Pilot Harbour, affords shelter to small boats.

The anchorage is in the northeast corner of the harbour and to enter, approach from the southeast keeping close to the high rocky bank, pass between two small islands to port and a small round island to starboard, then turning sharply to the northeast keeping a sharp lookout for a rock, with one to 2 feet (0^m3 to 0^m6) over it, lying just off the point on the south side of the anchorage. A depth of 12 feet (3^m7) can be carried in. 30

Beacon.—A white beacon with a red top is situated on an island in the entrance to Ganley Harbour. 35

A bare rock, 10 feet (3^m0) high and with deep water close around it, is situated 2½ cables south-southwestward of the west entrance point of Ganley Harbour. However, there is a depth of 19 feet (5^m8), 2 cables west of this rock. This rock looms up fairly conspicuously from eastward or from westward. 40

A shoal, rocky and small in extent, with less than 6 feet (1^m8) of water on it, lies 1½ miles westward of the above bare rock, and 2½ cables southeast of the second point of land westward of it. The water is deep close around it.

An island, about 40 feet (12^m2) high, with dry rocks off each end, is situated a short distance from the shore 2¾ miles westward of the above bare rock, or 9 miles southeastward of La Canadienne Point. From eastward or from westward, the island shows up fairly conspicuously. 45

A shoal, rocky and small in extent, with less than 6 feet (1^m8) of water upon it, lies 2½ cables south-southwestward of the middle of the above island. There is a depth of 21 feet (6^m4), 2 cables southeastward of this shoal, with deep water a short distance outside. 50

Chart 2309.

Another shoal, rocky and small in extent, lies $2\frac{1}{2}$ cables south of the first point eastward of the above island; its least depth is 15 feet (4^m6).

5 Fair anchorage for small craft may be found behind the above island, in winds other than those from the east or the southeast. This anchorage should be made from the east only, and care should be taken to avoid the above 15-foot (4^m6) spot.

Julia River enters Lake Superior on the eastern shore about 5 miles northwest of Ganley Harbour.

10 **Puckasaw River** enters the Lake about three and a half miles above Julia River, and about two and three-quarter miles southeast of Pointe La Canadienne. There is a gravel bar across its entrance over which 6 feet (1^m8) can be carried with caution. The river can be navigated as far as the rapids by light craft and anchorage found to the eastward of same in about 20 feet (6^m1) of water.
15 No rock was visible at the entrance in 1949.

Puckasaw is situated in the bay one and three quarter miles northwestward of the river entrance. Little remains of it but ruins; the old wharf which is in very bad condition, and is under the surface in parts makes anchorage in the vicinity dangerous. **Davis Island** lies at the entrance to the bay referred to
20 above.

La Canadienne Point, 12 miles northwest of Ganley Harbour is bold and prominent, attaining a height of 250 feet (76^m2), and heavily wooded showing up well from a distance.

Two small dry rocks lie three-quarters of a cable northwest from the extreme
25 of the point, and three-quarters of a cable farther in the same direction is a rock, awash, and a short distance outside this, 20 fathoms (36^m6) of water will be found.

Richardson Harbour, a mile and a half north by west from La Canadienne Point, affords perfect shelter to tugs and small steamers. A small island, with good water about it on all sides, one-third of a mile long northwest and southeast and 300 yards (274^m3) across, forms the harbour. Entrance may be made at
30 either end of the island, which are both steep-to, the northwest entrance being the deeper of the two. During the progress of the survey the steamer *Bayfield*, drawing $10\frac{1}{2}$ feet (3^m2) of water, frequently tied up at the wharf on the north side of the island, passing in at either entrance according to the weather, the southeast
35 entrance being found the better in westerly winds.

The northwest part of La Canadienne Point and the southeast end of Richardson Harbour Island, being steep-to, may be kept well aboard, if desired, entering.

Northwest of Richardson Harbour Island and on the west side of the
40 channel, entering, extend some small islands for a distance of a half a mile; but outside the dry rocks the water is good.

Chart 2308.

Otter Island, 250 feet (76^m2) high, the summit of which lies northwest $7\frac{1}{4}$ miles from La Canadienne Point, is 2 miles long northwest and southeast by one-third of a mile in width. The island is sparsely wooded with poplar, birch, and
45 spruce, and bare rock showing at the summit. The water about the island is deep, with the exception of the northwest point, from which a string of dry rocks extends in a northwest direction 4 cables, and a spot, with 9 feet (2^m7) of water over it, lies $1\frac{1}{2}$ cables farther on in the same direction.

Chart 2308.

Entering the anchorage behind Otter Island, care must be taken to avoid this spot and small craft should not attempt to pass between it and Otter Head as this area is lumpy and bottom can be seen.

A string of dry rocks, $2\frac{1}{2}$ cables long northwest and southeast with deep water about them, lies about 2 cables off the middle of the southwest side of Otter Island and are separated from this island by 20 fathoms (36^m6) of water. 5

It has been reported that bottom can be seen on a shoal lying about half a mile southeastward of the largest rock which lies off the southwest side of Otter Island. 10

There is good anchorage for small craft, in about 12 feet (3^m7) of water, in the narrow channel between the north side of Otter Island and the small island to the north, abreast the lightkeeper's dwelling, which is situated about a quarter of a mile east of the lighthouse. The Talanico Fishing Company have a small settlement here. 15

Light.—Near the northwest extreme of Otter Island is erected a white, octagonal, wooden tower, surmounted by a red lantern, which from a height of 97 feet (29^m6) exhibits a *flashing white* light, showing *one flash every 8 seconds*.

Fog signal.—A diaphone fog signal, sounding *2 blasts of 2 seconds duration every minute*, is situated near the edge of the cliff, 400 feet (121^m9) west of the lighthouse. The building is square, wooden, and painted white. 20

Otter Head is on the main shore southeast of Otter Island, from which it is separated by a channel 400 yards (121^m9) in width, and through which 17 fathoms (31^m1) of water may be carried. It is from 200 to 500 feet (61^m0 to 152^m4) in height, sparsely wooded and can be distinguished at a considerable distance. 25

A rock, with less than 6 feet (1^m8) of water over it, and deep water about it, lies half a mile west of Otter Head.

A small spot, with 15 feet (4^m6) least water, lies northwest by west 400 yards (365^m8) from the same point. This shoal narrows the channel entering Otter Cove from the south, however, the water is quite deep directly outside it and as the southeast point of Otter Island is almost steep-to, it is advisable to hold well over to the north side of the channel. 30

Otter Cove, on the northeast side of Otter Head, is a very snug harbour for small steamers affording perfect shelter from all winds, but, in 1949, dead heads were reported near its head, and vessels, should exercise caution. 35

An island in the entrance contracts the channel on the south side to about 50 yards (45^m7) in width; the north side of the island is joined to the main shore by shallow water. A depth of 24 feet (7^m3) of water may be carried in through the narrow entrance, and about 30 feet (9^m1) of water inside, over mud bottom; the anchorage area, over 18 feet (5^m5) of water, is 4 cables long by one cable across. 40

Buoys.—A black spar buoy, eastward of Otter Island, marks a shoal projecting from the mainland. A red spar buoy marks a $3\frac{1}{4}$ fathom (6^m3) shoal off the southeast end of Otter Island, and a black spar buoy is moored nearly opposite to mark a shoal on the mainland side. 45

A spot, with 19 feet (5^m8) of water over it, lies about midway between the northwest end of the island in the entrance to Otter Cove and the southeast extreme of Otter Island. It is marked on its eastern side by a red spar buoy. 50

Chart 2308.

Anchorage for large steamers, with fair shelter, will be found off Otter Island towards the southeast part, in about 15 to 20 fathoms (27^m4 to 36^m6) of water over sand bottom.

- 5 **Directions.**—Entering from the west, hold well over towards Otter Island rounding the southeast point at 150 yards (137^m2) distance to avoid the shoals off Otter Head and the 19-foot (5^m8) spot referred to above. If from the north-west, hold well over towards Otter Island, which is almost steep-to, to avoid a spot, with 15 feet (4^m6) least water, lying abreast the middle of Otter Island and
10 150 yards (137^m1) off the main shore. It is marked by a black spar buoy.

Cascade River enters the Lake through Otter Falls which are conspicuous, and which lie 3 $\frac{3}{4}$ miles northeastward of Otter Head.

- Triangle Harbour** 2 $\frac{1}{4}$ miles northwestward of Otter Falls has an anchorage with 6 feet (1^m8) of water over boulders and sand, but it is not a safe harbour as it
15 lies open to the northwest. A white beacon stands on the south point of the entrance.

- Swallow River**, less than one mile north of Triangle Harbour, has rapids at its mouth and affords no shelter as an anchorage. About a quarter of a mile north of the river entrance, however, there is a small bay, known as Trapper's
20 Harbour, in which there is a wharf for small craft of 3 feet (0^m9) draught, and anchorage can be found in 6 to 10 feet (1^m8 to 3^m0) over sand and clay bottom. It affords good shelter. The bights to the north of this small bay afford no shelter as they are steep-to.

- From Otter Cove, the shore trends in a general north-northwest direction for
25 about 13 miles to Simons Harbour. The shore between, though considerably broken up by small bays does not afford shelter to anything but boats. The land is high in the vicinity and the shore bold, having practically no outstanding shoals, with the exception of a bluff point north-northwest 7 $\frac{1}{2}$ miles from Otter Island light, off which there are two shoal spots. One, with less than 6 feet (1^m8)
30 of water, lies due west 400 yards (365^m8) from the point and the other, with 10 feet (3^m0) of water, is 400 yards (365^m8) northwest from the former and about 4 cables off the point.

- Tip Top Hill**, 1,520 feet (463^m3) high, the site of a United States triangulation station, lies 6 miles due east from Simons Harbour and is the highest elevation
35 about this district.

Simons Harbour, (*Lat. 48° 16' N., Long. 86° 08' W.*) 11 miles north-north-west from Otter Island lighthouse, affords fair shelter from most winds but very limited anchorage in about 15 fathoms (27^m4) over clay bottom. A number of small islands and rocks, affording shelter, lie off the entrance to the harbour.

- 40 The best entrance is from the southwestward between the islands and the west entrance point to the harbour, heading northeast by north. The channel is about 300 yards (274^m3) wide with about 15 fathoms (27^m4) of water.

Beacons.—Two beacons, one with a black top, the other with a red top, mark the west and east sides, respectively, of the entrance to Simons Harbour.

- 45 A spot, with 21 feet (6^m4) of water, lies 3 cables outside the islands off the entrance to Simons Harbour, however, when the entrance channel opens up, a vessel is well clear of this danger.

A string of dry rocks, with deep water both east and west of it, lies two-thirds of a mile off the next point north of Simons Harbour.

Chart 2308.

Stench Rock, with less than 6 feet (1^m8) of water, lies half a mile south of the above dry rocks and three-quarters of a mile off the main shore, also the same distance off the outer dry rocks off Simons Harbour, and is the most outstanding off this part of the shore. It breaks in any sea.

From Simons Harbour, the shore trends in a general north-northwest direction 9 miles to Oiseau Bay, the shore being broken up by small bays and fronted by small islands, but there are no outstanding shoals after Stench Rock is passed. The shore is bold, with the same characteristics as the shore to the south, and may be approached quite close.

Chart 2304.

Oiseau Bay is an unimportant indentation about one mile long and the same distance across affording little shelter for anything but small craft, which can be had in the north side behind the island just inside the northwest entrance point.

Coast.—From the northwest point of Oiseau Bay, the shore trends in a general northwesterly direction 1½ miles to **Sewell Point**. The point is formed by some small islands just separated from the shore; the land in the rear rises to a considerable height and is sparsely wooded. Shoal water extends off this point about three-quarters of a cable, and outside that drops off suddenly to very deep water.

From Sewell Point, the shore trends in a general north by west direction 11½ miles to Playter Harbour, and has no outstanding shoals and may be approached to within a mile with safety.

Playter Harbour, a narrow indentation running in almost due east about a mile and a quarter and 250 yards (228^m6) across, affords shelter for small craft but is quite open to the westward. Rocks, with less than 6 feet (1^m8) of water, extend off 1½ cables from the south entrance point, however, the north side of the entrance is deep-to, having 20 fathoms (36^m6) of water close alongside.

From the north entrance point to Playter Harbour, the coast trends in a general northwesterly direction for 3 miles to Ogilvy Point, the coastline being much broken up by a shallow and unimportant bay and a mile to the north of which will be found the mouth of the **Pic River**, which is about 2 miles east by south from Ogilvy Point. Although one to 3 fathoms (1^m8 to 5^m5) of water will be found in the river, very little water can be carried over the sandbar, which extends across the mouth, and a quarter of a mile offshore. After entering the narrow mouth, the river is about 150 yards (137^m1) wide for about 2½ miles.

Settlement.—There is an Indian settlement along the banks of the river with two churches. Heron Bay is the nearest post office, about 4 miles distant.

Chart 2318.

Ogilvy Point, (Lat. 48° 37' N., Long. 86° 21' W.) the most outstanding along this section of the shore lies 36 miles north-northwest from Otter Island lighthouse. The outer part of the point is formed by an island about three-quarters of a mile long and several smaller ones tapering off to dry rocks at the southwest extreme, which are almost steep-to. There are no outstanding shoals off this point.

Chart 2318.

Heron Bay, lies about 2 miles north-northeast from Ogilvy Point, the coast between being much broken up by deep bays, with islands and rocks off their mouths, is about 2 miles long by three-quarters of a mile across at the mouth
 5 gradually tapering to the head of the bay. The land between Heron Bay and Pic River is quite high and sparsely wooded.

Anchorage may be had in 7 fathoms (12^m8) over sand bottom, but it is quite open to the lake and therefore affords no shelter from westerly winds. The north and south sides are fronted by islands and rocks extending off a quarter
 10 of a mile.

Wharf.—On the north side of Heron Bay is a steel, sheet wharf, 322 feet (98^m1) long, for loading pulpwood; in the berth alongside is a depth of 21 feet (6^m4).

Leading lights.—The front light, *fixed green*, is shown, at an elevation of
 15 35 feet (10^m7) from a white mast with a white diamond-shaped daymark; the rear light, *fixed green*, is shown at an elevation of 70 feet (21^m3), from a similar structure located 1,275 feet (388^m7), 058° , from the front light.

Buoyage.—A red cylindrical bell-buoy marks the 17-fathom (31^m1) spot located $2\frac{3}{4}$ miles from the front light; the buoy is placed about 275 feet (83^m9)
 20 southeast of the alignment of the lights. A red spar buoy is moored on the north-west extremity of the 6-fathom (11^m0) spot northwest of **Boulton Reef**. A black spar buoy is moored on the southeast extremity of **Keating Rock**. Two black spar buoys are moored about 200 yards (182^m9) southwestward and 80 yards (73^m2) westward of the end of the wharf on the edge of the shoal water
 25 making off from the small islands, located southwest of the wharf.

Heron Bay is a station on the main line of the Canadian Pacific Railway and the first point touched on Lake Superior from the eastward. It has a general store and post office.

Randle Point, about a third of a mile long in a westerly direction, and
 30 quite narrow, is the western extreme of the northwest entrance point to Heron Bay. To the south of the point is found a bight with shallow water extending off one-third of a mile, however, the extremity and north side of Randle Point are deep-to.

Chart 2304.

Coast.—From Randle Point, the shore trends comparatively straight in a northwest by north direction for 5 miles to The Peninsula, the southeast entrance point to Peninsula Harbour. For the most part, this stretch of shore is fronted by a bank extending off a quarter of a mile, beyond which the water is good. The main line of the Canadian Pacific Railway parallels the shore here.

Craig's gravel pit, near the line of the railway and half-way between Heron Bay and Peninsula Harbour, shows up well from a distance and makes a good mark for distinguishing the locality. **The Peninsula**, a rounded point about 1,200 yards ($1,097^m3$) across narrowing to half that distance at the neck, is sparsely wooded, having been burnt over. It rises to a height of 490 feet (149^m4),
 40 about the middle, and can be seen from a considerable distance. It is deep-to in its southwest, west and almost so on its north side.

Chart 2304.

Radio towers.—Two radio towers surmounted by *fixed red* lights are situated on the summit of The Peninsula.

Light.—A *fixed white* light is exhibited, at an elevation of 530 feet (161^m5), from the southern radio tower on The Peninsula. The light is privately main- 5
tained.

Chart 2306.

Peninsula Harbour, situated in the northeast corner of Lake Superior, lies 9 miles east of the summit of Pic Island, or 45 miles north-northwest from Otter Island light. 10

Ypres Point, a narrow neck projecting in a southwesterly direction 2 miles from the general line of the coast, forms the northwest side of the harbour. The shores of this point are almost deep-to. The entrance to the harbour lies between this point and The Peninsula before alluded to, a distance of 1½ miles.

Hawkins Island, densely wooded, triangular in shape, lies west-northwest 15
from the Peninsula five-eighths of a mile and between these two is the main entrance to the harbour. The north entrance, between Hawkins Island and Ypres Point, is blocked by **Manitoba Shoal**, with less than 6 feet (1^m8) of water over it, and lying half a mile west from the north point of Hawkins Island.

Buoy.—A red and black spar buoy marks the southwestern extremity of 20
Manitoba Shoal.

Senlis Shoal, very small and with less than 6 feet (1^m8) of water over it, lies 200 yards (182^m9) off the east point of Hawkins Island, the water between being quite deep. The north and south points of Hawkins Island have shoal water extending off 100 yards (91^m4), otherwise the shores of the island are quite clean. 25

Blondin Island, densely wooded, lies in the middle of the western part of the harbour. It is a little over half a mile long and a quarter of a mile wide. Shoal water extends off the east shore from a quarter to half a cable but the west shore is almost deep-to. The east shore of the harbour is fronted by a shallow bank extending from one-quarter to half a mile off shore at **Skin Island**, 30
which is 250 yards (228^m6) in diameter, and lies a quarter of a mile off the east shore, and about half a mile north-northeast of the Peninsula.

Meaux Shoal, with 9 feet (2^m7) least water on it, and half a cable in diameter, lies west-northwest one cable from Skin Island.

Lights.—On the south end of Hawkins Island is a white, square, wooden 35
dwelling, surmounted by a white, square, wooden lantern, with red roof, from which is shown a *flashing white* light of *one flash* every 30 seconds, at an elevation of 88 feet (26^m8). The light is visible 16 (14 nautical) miles.

A *flashing white* light is exhibited, at an elevation of 38 feet (11^m6), from a pole at the southwest end of Skin Island. 40

Fog signal.—A fog tyfon, sounding *three blasts* every 20 seconds, is located at the lighthouse on Hawkins Island.

Chart 2306.

Jellicoe Cove lies to the eastward of The Peninsula. Around the head of the cove is the town of **Marathon**. The plant and wharf of the Marathon Paper Mills lie on the western side of Jellicoe Cove. The wharf has a length of 460 feet 5 (140^m2) with a depth of 19½ feet (5^m9) alongside. The eastern side of Jellicoe Cove is used as a booming area and is surrounded by cribs.

Two black spar buoys indicate the position of an intake pipe.

Anchorage.—Peninsula Harbour is quite open to the southwestward, the island affording very little shelter and the only berth, with protection from all 10 winds, is in Jellicoe Cove, northeast of The Peninsula, in 7 fathoms (12^m8) of water over sand bottom.

The main line of the Canadian Pacific Railway passes close along the northeast shore of the harbour.

Port Munro.—This snug little harbour, free from shoals, lies 2½ miles north 15 of the extreme of Ypres Point, the coast between being free from shoals.

The head of the harbour is used as a log storage area, and is closed by a boom.

Monmouth Island is really the west entrance point to Port Munro. It is about 150 feet (45^m7) high, and wooded, and the shores are fringed with a shoal bank from 25 to 50 yards (22^m9 to 45^m7) in width, with the exception of the north- 20 west point, which is joined to the main shore by shoal water.

Chart 2304.

Red Sucker Cove, (Lat. 48° 46' N., Long. 86° 29' W.) a little over 2 miles west from Port Munro, is a bell mouthed indentation in the coastline extending in about a mile. Though free from shoals, the water is deep and quite open to 25 the southward. The point forming the east side rises abruptly to a height of 200 feet (61^m0). The main line of the Canadian Pacific Railway passes close along the west shore.

Port Coldwell.—From the head of Red Sucker Cove, the coastline trends in a southwesterly direction for 2½ miles to the entrance to Port Coldwell. It is 30 a small inlet, about a quarter of a mile across at the mouth, and extending in a north-northwesterly direction for 6 cables. The space is very limited; however, good shelter for small craft will be found at the head of the inlet. Considerable protection is afforded to the harbour by Detention Island and the dry rocks to the north of it. There is a station on the main line of the Canadian 35 Pacific Railway, about a quarter of a mile north of the head of the harbour, and a general store and post office.

The southern entrance point is deep-to, and should be kept fairly close on the starboard hand entering, to avoid the dry rocks to the north of Detention Island, which narrow the channel to 8 cables in width.

Light.—A *flashing white* light is exhibited, at an elevation of 29 feet (8^m8), 40 from a steel mast with white daymark, on the southern extremity of the eastern entrance point to Port Coldwell.

Detention Island, lying 8 cables south of the eastern entrance point to Port Coldwell and 3 cables off the main shore, is about half a mile in diameter 45 and 215 feet (65^m5) high. The shores of the island are clean, with the exception of the north part, where dry rocks make off in a northerly direction for 3 cables

Chart 2304.

and a detached rock, 8 feet (2^m4) high, lies 5 cables to the northward, This last mentioned rock has a spot, with less than 6 feet (1^m8) of water, $1\frac{1}{2}$ cables to the westward of it.

Hale Rock, small and 3 feet (0^m9) high, is the most outstanding rock off here. It lies a little over $2\frac{1}{2}$ miles due south from Detention Island and $3\frac{1}{4}$ miles east from the southeast point of Pic Island. It has deep water closely to the east and west, but $3\frac{1}{2}$ fathoms (6^m4) will be found one cable to the south and $1\frac{3}{4}$ fathoms (3^m0) of water 2 cables to the northward. 5

Foster Island is about 150 feet (45^m7) high and just separated from the main shore at the southeast extreme of a prominent headland, forming the east side of Ashburton Bay, north of Pic Island. Several shoals and dry rocks extend off the southeast point of the island to the eastward, the largest island being called Sullivan Island, and the outer shoal of the string called McKay Rocks, with 2 feet (0^m6) least water over them, and quite small, lying southeast 6 cables from Sullivan Island. Deep water approaches close to the shoal, and there is 11 feet (3^m4) of water north-northwest half-way to the nearest dry rock. 10 15

Slyboots Rock, 8 feet (2^m4) high and quite small, lies $6\frac{1}{2}$ cables east from Sullivan Island. It is fringed with a narrow bank of shoal water, and 16 feet (4^m9) of water will be found 300 yards (274^m3) to the north, and 19 feet (5^m8) 300 yards (274^m3) due south. 20

Black Rock, 12 feet (3^m4) high and of small extent, lies one mile south of Foster Island and a mile and a half east of Pic Island.

About $1\frac{3}{4}$ miles behind Foster Island, the main shore rises to an elevation of 855 feet (260^m6) above the lake at Mount Premier. 25

Pic Island, irregular in shape, $3\frac{1}{2}$ miles in extreme length and one mile across, rises abruptly from the lake to 600 to 700 feet (182^m9 to 213^m4), attaining the greatest height of 715 feet (217^m9) towards the north part of the island. It has been burnt over and the summits are quite bare, however, the valleys between are wooded. Owing to its bold appearance, it can be seen from a great distance, especially from the westward. It is separated from Guse Point, the southeast point of Ashburton Bay, by a deep passage, known as Thompson Channel, half a mile in width. The summit of the island lies about east-northeast, $18\frac{1}{2}$ miles from Slate Island light. 30

Local magnetic disturbance, of varying strength, has been reported in the neighbourhood of Pic Island. 35

Anchorage may be had, in the bight east of the north point of the island, in from 10 to 20 fathoms (18^m3 to 36^m0) of water over mud bottom.

McDonald Islands lie off one-third to three-quarters of a mile to the north-eastward, and are almost joined to Pic Island by a shallow bank, leaving a deep passage 2 cables across. 40

The outer and larger of the islands, 65 feet (19^m8) high, has deep water close outside it.

Allouez Island, 120 feet (36^m6) high and 500 yards (457^m2) across, is deep-to on the southwest side—a narrow bank making off the remainder of the island. It lies to the southward of Pic Island, from which it is separated by a deep water passage half a mile in width. 45

Chart 2304.

Nicoll Shoal, with 13 feet (4^m0) least water over it, lies 3 cables north-northwest from the north point of Pic Island and directly in the middle of Thompson Channel. The best water will be found between this shoal and Guse
5 Point, which is deep-to.

Ashburton Bay, lying northward from Pic Island, is an indentation of the coast lying between Guse and Bottle Points, a distance of 10 miles, and extends to the north for 3 miles inside the line of the points. The land in the vicinity is a series of rocky hills, which have been burnt over and are sparsely
10 wooded. For the most part, the bay is deep and quite open to the lake, with the exception of McKellar Harbour, about the middle of the north shore.

McKellar Harbour is about 1½ miles across at the mouth and half that distance long. However, a large island with smaller ones and shallow banks making off the east side lies in the middle of the harbour affording protection,
15 but contracting the available space to too small an area for anything but small craft.

Entrance may be made on either side of the above island, however, much the better passage will be found on the west side where the island is deep-to. The main line of the Canadian Pacific Railway passes close to the shore of the
20 north arm of the harbour.

Barclay Islands, the largest of which is 250 yards (228^m6) across and 85 feet (25^m9) high, lie 1½ miles south of McKellar Harbour. They are deep-to on the south, east and north, but a shallow bank makes out three-quarters of a cable to the westward.

25 **Bottle Point**, the west entrance point of Ashburton Bay, is a narrow neck of rock projecting from the main line of the shore about half a mile. It has a small, unimportant boat harbour called L'anse a la Bouteille on the west side.

Fitzsimmons Rocks lie southwest 2½ miles from McKellar Harbour, and three-quarters of a mile off the main shore. At this point, shoal water extends
30 off about half a mile, leaving a passage 200 yards (182^m9) in width inside Fitzsimmons Rocks. Fitzsimmons Rocks are mostly deep-to.

A rock, 2 feet (0^m6) high, lies 4 cables to the westward of them and a depth of less than 6 feet (1^m8) will be found close northward of this rock. A depth of 22 feet (6^m7) will be found 2 cables south-southeast from this rock and is the
35 most outstanding shoal off this section of the shore.

Lawson Island, lying west-northwest 2½ miles from Bottle Point, and 6 cables offshore, is a cable and a half in diameter and has shoal water extending off one cable to the northeast and southwest.

Haiste Rocks, with less than 6 feet (1^m8) of water over them, lie half-way
40 between Lawson Island and the main shore.

The land between Bottle Point and Jackfish Bay is bold, rising to a height of 760 feet (231^m7) at Steel Mountain, about midway between the above points and about a mile back from the coastline.

Chart 2305.

Jackfish Bay, on the north shore, about midway between Peninsula Harbour and Battle Island, forms a good harbour of refuge. The bay is about a mile across at the entrance, but is contracted to half that distance by St. Patrick Island. 5

St. Patrick Island (*Lat.* $48^{\circ} 47' N.$, *Long.* $86^{\circ} 59' W.$) is 160 feet (48^m8) high towards the northern part, and $3\frac{1}{4}$ cables long north-northeast and south-southwest by $1\frac{1}{2}$ cables across. There is a narrow channel of deep water to the eastward of the island, but it is not recommended unless locally acquainted. The main channel is to the westward of the island which should be given a berth of two cables. 10

Light.—A *flashing white* light is exhibited, at an elevation of 39 feet (11^m9), from a white, steel skeleton tower on the western side of St. Patrick Island.

With the exception of the middle of the northwest side, which is deep-to, the island is fringed by a shallow bank extending off about 50 yards (45^m7). 15

Teed Shoal, with 16 feet (4^m9) least water over it, lies close southwestward of the lighthouse.

Jackfish Bay is composed of the area just north of St. Patrick Island, about a mile square, and two arms, Moberly Bay to the northwestward, and the northeast arm, a little better than a quarter of a mile in width and extending up one mile, forming almost a landlocked harbour with protection from all winds. The main portion of the bay is free from shoals with the exception of **Little Nick Rock**, 3 feet (0^m9) high, with a shallow bank extending 50 yards (45^m7) to the south; however, this part of the harbour is quite open to the south. 20

Moberly Bay affords anchorage, but although there are some islands in the mouth, they afford little or no protection and it is quite exposed to the south. 25

Village.—The main line of the Canadian Pacific Railway skirts the east and north shore of the bay, having a station at the village situated on the main shore northeast from St. Patrick Island. There is a post office and general store where moderate supplies can be obtained. 30

Entering Jackfish Bay, keep to the centre of the channel westward of St. Patrick Island. At the village is a Government wharf, with a face 54 feet (16^m5) long and a depth alongside of 12 feet (3^m7). 35

Anchorage.—The safest anchorage is in the northeast arm, where an almost landlocked harbour will be found, with 10 fathoms (18^m3) of water, over mud bottom, and as the holding ground is reported not to be the best, it is advisable to let go both anchors if heavy winds are expected. 35

Cape Victoria, the west entrance point to Jackfish Bay, is bold and deep-to. The land rises to a height of 350 feet (106^m7) about a quarter of a mile back and is sparsely wooded, having been burnt over. It can be seen for a considerable distance. 40

Chart 2304.

SLATE ISLANDS, consisting of two large islands and six smaller ones, lie $5\frac{1}{4}$ miles south of Cape Victoria. Three of the latter lie between the larger islands, and the remaining three are to the northeast, outside the main group. Generally speaking, the south, east and west shores of the main group are free from shoals; however, some shoals lie off to the northward and should receive a berth of a mile. 45

Chart 2304.

Patterson Island, the largest of the group, $4\frac{3}{4}$ miles wide east and west, by 4 miles across, is the most southerly island. It is almost bare, having been burnt over; the highest point of rock, 325 feet (99^m1), being near the south shore.

5 **Light.—Fog signal.—Radio beacon.**—A *group flashing white* light, showing 2 flashes every 15 seconds, is exhibited, at an elevation of 224 feet (68^m3), from a white, octagonal wooden tower with a red lantern, on the southeastern extremity of Patterson Island.

10 A fog diaphone, sounding one blast every 60 seconds, is situated in a white, square wooden building close southwestward of the lighthouse.

There is a radio beacon at the lighthouse.

Sunday Harbour, just north of the lighthouse point, is not recommended as the water is deep, and the holding ground poor, and with a southerly or southwest wind a heavy sea heaves in making the place untenable and difficult or
15 impossible to clear.

Mortimer Island, to the northward of Patterson Island, from which it is separated by a narrow deep water channel, is 4 miles long east and west, by one mile across, and heavily wooded. It attains a height, towards the west end of 460 feet (140^m2) to top of trees, the highest point of the Slate Islands.

20 **McGreevy Harbour**, in the north part of Patterson Island and landlocked by **Edmonds**, **McColl**, and **Bowes Islands**, is unimportant as it is difficult of access, water deep and holding ground poor.

Frank Rock, small and 6 feet (1^m8) high, lies 4 cables north, off the middle of Mortimer Island, and is deep-to.

25 **Dahl Shoal**, with less than 6 feet (1^m8) of water over it, lies 4 cables west-southwest from the above and is also deep-to.

Leadman Group consists of an island about 2 cables across and 65 feet (19^m8) high, surrounded by smaller ones, lying $1\frac{1}{2}$ miles to the northeast from Patterson Island, and another small island, lying to the northwest and separated
30 from the former by a deep water passage 3 cables wide. Shoal water extends a cable to the northward from the latter small island.

Anchorage may be had in Lambton Cove on the south side of Mortimer Island in 14 fathoms (25^m6) but in entering care must be taken to avoid **Kate Rock**, lying $1\frac{1}{2}$ cables off the north point of Edmonds Island, by holding well over
35 towards Mortimer Island.

Chart 2300.

Superior Shoal.—In 1930, a previously uncharted bank was found in the middle of Lake Superior and named Superior Shoal, (Lat. $48^{\circ} 04' N.$, Long. $87^{\circ} 06' W.$). Inside the 50-fathom (91^m4) line, the bank is $2\frac{1}{2}$ miles long and 9 cables
40 wide. There are two shoal spots in this area with 21 and 30 feet (6^m4 and 9^m1) over them, respectively. The 21-foot (6^m4) spot is quite small, about 100 feet (30^m5) in diameter, and is visible from above. Deep water surrounds it. The 30-foot (9^m1) spot lies about three-quarters of a mile, 200° from the first rock.

This shoal should be given a wide berth at all times.

Chart 2304.

On the mainland from Cape Victoria to Terrace Bay, 6 miles to the westward, the shore is broken by many small indentations and fronted by shoal water and dry rocks from one to 3 cables offshore.

Almos Shoal, with 13 feet (4^m0) least water on it, being the most outstanding, lies one-third of the distance from Cape Victoria. 5

Chart 2303.

Terrace Bay, 1 $\frac{1}{4}$ miles across the entrance and extending in the same distance, is quite open from the southward. Shoal water extends off both entrance points terminating in **Chase Rock**, well above water, on the east side, and **Keith Rocks**, which extend off the west entrance point in a southeasterly direction for 2 $\frac{1}{2}$ cables. As they have very little water on them, they should be given a wide berth. 10

From Terrace Bay, the shore trends in a general westerly direction for 5 miles to Schreiber Point. For the most part, the shore is bold and fringed by a shorebank half a cable in width, dropping to deep water. 15

Les Petits Escrits, consisting of a group of five small islands, lie 1 $\frac{1}{2}$ miles west of Terrace Bay and just separated from the main shore by a narrow channel of deep water. The eastern island of the group is 60 feet (18^m3) high.

Anchorage for small craft may be had behind the islands, but would be untenable in heavy weather. 20

Like the foregoing, the country behind the shoreline between Jackfish Bay and Schreiber Point is very uneven, rocky, and burnt over; however, the hollows between the hills are thickly wooded with poplar, birch, and spruce.

CHAPTER XV

SCHREIBER POINT TO THUNDER CAPE, INCLUDING NIPIGON AND BLACK BAYS

Charts 2303, 2312.

5 **Nipigon Bay and approaches.**—Nipigon Bay, the most northerly part of Lake Superior, is about 40 miles in greatest length west-northwest from Wilson Island to the mouth of Nipigon River and 15 miles in greatest breadth from the head of Nipigon Strait to the head of Mazokamah Bay. Speaking generally, with the exception of the western part, south of Five Mile Point, which is flat
10 and swampy to the shores of Black Bay, the bay is surrounded by high, bare, rocky hills that have been burnt over. They attain an altitude of 1,265 feet at St. Ignace Island in the south, and range from 900 to 1,155 feet (274^m3 to 352^m0) to the northeastward, about 3 miles back from the shoreline, and between 600 and 700 feet (182^m9 and 213^m4) to the northwestward.

15 The main line of the Canadian Pacific Railway passes close along the north shore of the bay.

A group of islands takes up the middle portion of the widest part of the bay, from which a shallow bank extends south to the north shore of St. Ignace Island, over which not more than 14 feet (4^m3) of water may be safely carried;
20 however, a deep water channel will be found to the north, east, and west of the islands.

To the southward, the bay is separated from Lake Superior by a string of islands, the principal of which are Copper, Wilson, Salter, Simpson, and St. Ignace and through which five ship channels lead in to the bay, named from east
25 to west, Schreiber, Wilson, Simpson, Moffat, and Nipigon Channels.

Chart 2303.

Schreiber Point, (Lat. 48° 46' N., Long. 87° 18' W.) wooded and rugged, the east entrance to Schreiber Channel, is the most conspicuous feature in this locality, rising to a height of some 850 feet (259^m0) at Gwynne Mountain about
30 a mile in an east by north direction from the extreme of the point.

Collingwood Bay.—From Schreiber Point, the shore trends in a general north-northeast direction for 1½ miles to the head of Collingwood Bay. For the most part, the coast between is very rugged, steep cliffs without any beach and steep-to. The bay has deep water.

35 **Anchorage.**—There is really no anchorage along the shore, however, it may be had about 300 yards (274^m3) offshore at the head of Collingwood Bay in 15 fathoms (27^m4).

Schreiber is a station and division point on the main line of the Canadian Pacific Railway. It has several general stores and reasonable supplies may be
40 obtained. There is a good trail from the head of Collingwood Bay to the village, about a mile and a half in a northeasterly direction.

Chart 2303.

The north shore to Collingwood Bay trends west by north for about 2 miles to a small bay, thence it trends in a general west-northwest direction for 3 miles to Winston Point. Along this stretch, the water is good, and for the most part the shore is steep-to. 5

Winston Point, bearing northwest by west $4\frac{1}{4}$ miles from Schreiber Point, is quite high, the land rising to a height of 650 feet (198^m1) about a mile behind the point. The hills are almost bare here, having been burnt over. A shallow bank fronts Winston Point. The main line of the Canadian Pacific Railway passes half a mile inside the extreme of the point. 10

Cat Islands, with the summit of the largest 117 feet (35^m7) to the top of trees, bearing west by north distant $1\frac{3}{4}$ miles from Winston Point, consist of two islands separated by a channel less than 100 yards (91^m4) wide, with less than 6 feet (1^m8) of water. Together they are three-quarters of a mile long, and the largest is a quarter of a mile wide. The northwestern, north and south sides are steep-to, but shoal water extends off the eastern end of the small island terminating in a small dry rock 400 yards (365^m8) southeast of the eastern extremity of the island. 15

A rock, with 17 feet (5^m2) least water over it, lies 145° , distant 1,000 yards (914^m4) from the same point and has deep water about it. 20

From Winston Point, the shore trends in a general north by west direction for $1\frac{1}{4}$ miles being steep-to, thence it takes a general westerly direction for about 5 miles to the harbour and village of Rosspport. Along this stretch of shore, the 18-foot (5^m5) bank extends off 200 yards (182^m9) and beyond that the water is deep and no outlying dangers. Back of the shoreline the bare, rocky country has been burnt over. The main line of the Canadian Pacific Railway passes a short distance back about parallel to the shore line. 25

Rosspport, on the north shore of Lake Superior, is a station on the main line of the Canadian Pacific Railway and therefore has the usual telegraphic communication. It has two churches, also a general store from which moderate supplies may be obtained. A short distance behind the village, the land rises suddenly to some 300 feet (91^m4) and is practically bare, having been burnt over. 30

Rosspport Harbour lies between the headland which extends south half a mile on the west and Nicol Island on the east.

Wharf.—There is a Government wharf with an ell end 105 feet (32^m0) in length; along the face is a depth of 11 feet (3^m4). 35

Lights.—Two *fixed red* lights are shown from a lantern on a mast on the Government wharf.

Anchorage.—The anchorage space is about 500 yards (457^m2) square, with depths from 6 to 15 fathoms (11^m0 to 27^m4) over mud bottom, and perfect shelter from all winds. 40

A rock, with less than 6 feet (1^m8) of water over it, lies 75 yards (68^m6) east of the outer end of the wharf.

Chart 2312.

Nicol Island has shoal water extending 100 yards (91^m4) off the south side. 45

A small island, about 300 yards (274^m3) square and densely wooded, lies about 200 yards (182^m9) to the southwestward from Nicol Island. Between these, there is a narrow channel of good water into Rosspport Harbour by holding

Chart 2312.

well over to the former, to avoid the shoal water off Nicol Island on the south side. It is separated from Quarry Island by about 100 yards (91^m4) of very shallow water. From the north side, a rocky flat makes off in a northerly direction terminating in a small, wooded island which is steep-to on its north side, and forms the southeast entrance point to Rossport Harbour. At this point, the harbour entrance is only 200 yards (182^m9) from land to land and the channel, through which 30 feet (9^m1) of water may be carried, is about 50 yards (45^m7) in width. Entering, leave this small island about 35 yards (32^m0) on the starboard hand.

Light.—A *flashing white* light is exhibited, at an elevation of 31 feet (9^m4), from a lantern on a steel mast on the northwestern extremity of the above mentioned small, densely wooded island, lying close southwestward of Nicol Island.

NIPIGON BAY.—**Rossport Point**, situated west-northwest 12 miles from Schreiber Point, is 5 miles north of Battle Island light, and has shoal water extending off about 125 yards (114^m3) and should receive a berth of a quarter of a mile. The harbour of Rossport is situated on the east side of the point.

From Rossport Point, the north shore of the bay trends in a general west-northwest direction for 19 miles to MacInnes Point, the shore between being broken by a series of open bays extending in from 1½ to 3 miles. The first two headlands, Crow and Rainboth Points, are almost deep-to, but Grant and MacInnes Points, farther to the westward, have shoal water making off about a mile.

To the southward, this section of the bay is enclosed by the north side of Salter, Simpson, and St. Ignace Islands all of which are almost deep-to.

Barwis Rock, with less than 6 feet (1^m8) of water over it, and quite small, with deep water close by, is the most dangerous obstruction in this district. It lies southwest one mile from the south point of Powder Island.

Light-buoy.—A light-buoy, showing a *flashing white* light, and painted in red and black horizontal stripes, is moored on the western side of Barwis Rock.

Pays Plat Bay, lying just north of Rossport Point, is about 2 miles wide by 3 miles in from the general line of the shore, and for the most part is quite open to the southward. The head of the bay is fronted by a shallow bank extending off half a mile and through which the Pays Plat River enters the bay. An Indian village and church is situated on the banks of the river a short distance from its mouth. Pays Plat, a flag station on the main line of the Canadian Pacific Railway, is located on the shore of the northwest part of the bay, a short distance from the edge of the bank.

Powder Islands, two in number and fronted by a shallow bank, lie one-third of a mile off the northwest entrance point of Pays Plat Bay; between them and the shore is a deep-water channel 150 yards (137^m2) in width. These islands are almost deep-to to the southward.

Anchorage may be had, in 7 fathoms (12^m8) of water over clay bottom, behind Powder Islands.

Crow Point, (*Lat.* 48° 51' N., *Long.* 87° 39' W.) lying 5 miles northwestward of Rossport Point is a rounding, deep-to point, the rocky hills behind rising to a height of from 700 to 750 feet (213^m4 to 228^m6).

Chart 2312.

From **Crow Point**, the shore trends in a general north-northwest direction for 3 miles being deep-to; in places over 40 fathoms (73^m2) will be found a short distance off the cliffs. Thence the shore takes a general west-northwest direction for a further 3 miles, and gradually swings round to a southwest by west direction for 2 miles to Rainboth Point, thus forming a wide-open bight between Crow and Rainboth Points, $1\frac{1}{2}$ miles long. This bay is clear of shoals with the exception of **Oldman Shoal**, with 19 feet (5^m8) of water over it, and lying 3 miles north-west of Crow Point. The main shore, from abreast this shoal to Rainboth Point, is fronted by a shallow bank about 250 yards (228^m6) wide. 5 10

Cavers, a flag station on the main line of the Canadian Pacific Railway, is located on the main shore inside this shoal, or a little west of a conspicuous rock cut.

Gravel Bay, a mile and a half northeast from Rainboth Point, is a wide open bay with 7 to 15 fathoms (12^m8 to 27^m4) of water. 15

Rainboth Point, lying 6 miles west-northwest from Crow Point, is almost deep-to at the southeast extreme of the point, but shoal water extends off the west extreme 400 yards (365^m8).

Grant Point, west-northwest 3 miles from Rainboth Point, forms, with the latter, a bay, which extends in 2 miles. The north and west shores are fronted by a shallow bank, about three-quarters of a mile wide, and shallow water extends off Grant Point the same distance to the south, terminating in Druid Rock. 20

Three miles north-northeast from Grant Point the land rises to an altitude of 900 feet (274^m3) above the lake.

Druid Rock, 11 feet (3^m4) high, and quite small, lies 5 cables south from Grant Point. 25

Lakeside Shoal, with less than 6 feet (1^m8) of water over it, lies half a mile westward of Druid Rock. This shoal is very small with deep water about it, and is the most outstanding off the shore between Crow and MacInnes Points. The general steamer course up the bay, the north extreme of Simpson Island and northeast extreme Vert Island, in line, clears the shoal by almost a mile. 30

Anchorage may be had, in the bay between Rainboth and Grant Points, in 6 fathoms (11^m0) of water over clay bottom, and about half a mile northwest from the northwest shore of the former.

MacInnes Point, $4\frac{1}{2}$ miles west-northwest from Grant Point, is fronted by shoal water extending one mile to the southeastward. Behind the point a steep bluff rises to a height of 580 feet (176^m8) and attains a height of 735 feet (224^m1) a mile to the northeastward. The main line of the Canadian Pacific Railway passes between the bluff and the shoreline. 35 40

Buoy.—A red spar buoy marks the southern edge of the shoal water off MacInnes Point.

Gurney, a flag station on the main line of the Canadian Pacific Railway, is situated about 2 miles east-northeast from MacInnes Point near the lake shore.

From MacInnes Point, the shoreline trends in a general northwest by west direction for 6 miles to **Scully Point**, a long narrow point which projects out from the main trend of the shore in a southwest direction, for three-quarters of a 45

Chart 2312.

mile. It is the east entrance point to Mazokamah Bay. From the extreme of the point, shoal water extends off another three-quarters of a mile in a westerly direction, which in conjunction with the shoal water extending off to the eastward
 5 6 cables from Cooper Point, on the west side of the entrance, contracts the deep water entrance channel to Mazokamah Bay to about 150 yards (137^m2).

About 2 miles southeastward from the extreme of Scully Point, a conspicuous gravel pit shows up well from the bay, especially when the afternoon sun brightens it up.

10 **Kama**, (*Lat.* 48° 59' N., *Long.* 88° 00' W.) a flag station on the main line of the Canadian Pacific Railway, is situated half a mile northwest from this gravel pit. A water tank will also be seen in this direction.

Mazokamah Bay, the most northerly part of Nipigon Bay, has an area of about 1½ square miles of water over a depth of 3 fathoms (5^m5) free from shoals
 15 and with 9 fathoms (16^m5) in the middle. The west and north shores are fringed by shallow water for a distance of from a quarter to half a mile. A stream enters the head of the bay. The east shore is deep to about the middle and 30 feet (9^m1) of water will be found near the bank where the main line of the Canadian Pacific Railway passes close by. The land in the vicinity rises abruptly to a height of
 20 750 feet (685^m8).

Anchorage, with perfect shelter, may be had in the southeastern part of the bay, in 7 fathoms (12^m8) of water, over clay bottom.

Cooper Point, the west entrance point to Mazokamah Bay, has shallow water extending half a mile to the southward; a string of rocks, with very little
 25 water over them, extends about the same distance to the eastward of the point.

Hughes Point, west-southwest 4¾ miles from Cooper Point, has a shallow bank extending off three-quarters of a mile, with dry rocks on it, about a third of a mile to the south of the point.

Between Cooper and Hughes Points, a shallow bay makes in 1¾ miles and
 30 Jackfish River enters the northeastern part about 1¼ miles northwest from the former point.

Buoyage.—A red spar buoy marks the south extremity of the shoal making off from Hughes Point and a black spar buoy, off the north end of Clay Shoal, marks the opposite side of the channel.

35 **Firehill**, a flag station on the main line of the Canadian Pacific Railway, is located at the head of the bay.

The shallow bank along the shore extends out about 2 miles east-southeast from Hughes Point, narrowing the deep water channel north of La Grange Island to half a mile.

40 **Holden Shoal**, with less than 6 feet (1^m8) of water over it, lies on the south edge of this bank, nine-tenths of a mile southeastward of Hughes Point.

Light-buoy.—A red light-buoy, showing a *flashing red* light, is moored about half a mile southeastward of Holden Shoal.

Crichton Island, about 800 yards (731^m5) long north and south and 85
 45 feet (25^m9) high, has shallow water making off 300 yards (274^m3) to the south and northwest and 450 yards (411^m5) to the westward; the northeast side is steep-to.

Chart 2312.

It lies $2\frac{1}{2}$ miles east of Hughes Point and is separated from the shorebank by a passage half a mile wide. The deep water channel between it and Vert Island is one mile wide.

Nipigon River.—From Hughes Point, the shore takes a general west by north direction for $3\frac{1}{2}$ miles to **Cook Point**, the east entrance point to Nipigon River. Here the shallow bank off Hughes Point tapers to a quarter of a mile in width. From Cook Point, the east bank of the Nipigon River takes a general north by west direction for $3\frac{1}{2}$ miles to the village of Nipigon. For half this distance the river, from bank to bank, is three-quarters of a mile wide and quite bold, and for the remaining distance only a quarter of a mile across. 5 10

Beyond the village the river is quite narrow. On the west side of the entrance the bank is skirted by the main line of the Canadian Pacific and the Canadian National Railways, which turn to the westward a short distance to the south of the entrance to the river. 15

Buoys.—A red spar buoy, fitted with radar reflectors, is moored off Cook Point.

Where the river narrows, about $1\frac{1}{2}$ miles north of Cook Point, the entrance of the channel is marked by a red spar and a black spar buoy. From the buoys to the village is a dredged channel with a depth of 7 feet (2^m1). 20

Village.—As before stated, the village is $3\frac{1}{2}$ miles up from the mouth and is situated on the west bank. It had a population, in 1951, of 1,773, two small hotels and the usual telegraph and telephone connections. Stations on the main line of the Canadian Pacific and the Canadian National Railways are located here. 25

Anchorage.—About a mile above Cook Point (*Lat.* $48^\circ 58' N.$, *Long.* $88^\circ 15' W.$), the cliff on the east shore is steep-to and good anchorage may be had off here, in 10 fathoms (18^m2) of water over clay bottom. Above this point, the channel, in which 7 feet (2^m1) of water may be carried, is very narrow and does not admit anything larger than small craft, which proceed up to the Town wharf at Nipigon, located just below the Canadian National Railways bridge. 30

Wharf.—The Government wharf has a face 183 feet (55^m8) in length with a depth of 10 feet (3^m0) along the entire face, with the exception of a few feet at the upstream end.

At **Red Rock**, about $5\frac{1}{2}$ miles south of Nipigon Village, is the large, conspicuous pulp and paper mill and private wharf of the Brompton Pulp and Paper Co. The wharf is "L" shaped, extending first northward and then 460 feet (140^m2) eastward. On the north side, there is a depth of 22 feet (6^m7) alongside the wharf with deeper water farther off. On the south side, the berth, 400 feet (121^m9) long and 70 feet (21^m3) wide, has a depth of 20 feet (6^m1). 35 40

In 1951, Red Rock had a population of 1,145.

Leading lights.—*Fixed green* leading lights, with white triangular day-marks, mark the approach to the wharf. They are privately maintained.

Five Mile Point, on the west shore $2\frac{1}{2}$ miles south of Cook Point, has deep water quite close but half-way to the mouth of Nipigon River a bank extends off the west shore half a mile. 45

Chart 2312.

Behind Five Mile Point, in a west-northwest direction, the rocky hills rise abruptly to a height of 565 feet (172^m2) and a mile beyond in the same direction 855 feet (260^m6) to the top of the trees will be found.

- 5 From Five Mile Point, the shore trends in a general southerly direction for 6 miles to the head of a shallow bay, thence the same distance in a general east-southeast direction to Point a la Gourganne.

This stretch of shore is fronted by a shallow bank, which starts a short distance off Five Mile Point, and gradually widens until it extends off 1 $\frac{3}{4}$ miles 10 from the shoreline. It practically holds this width until 3 miles northwest from Point a la Gourganne, where it starts to taper down again practically merging with the shoreline at the above point.

There is a deep water channel between this bank and that extending off the islands in the middle of the bay, from three-quarters to one mile in width.

- 15 The land, behind the shoreline from Five Mile Point to about 7 miles to the southward or until the high land west of Point a la Gourganne is reached, is low and flat, 10 or 15 feet (3^m0 or 4^m6) high and is swampy and thickly wooded with poplar, birch, and spruce. This flat extends across to the shores of Black Bay.

- 20 **Point a la Gourganne**, the west entrance point to the head of Nipigon Strait, is bold and deep-to to the northeastward, the land to the westward, which is thickly wooded, rising to a height of 395 feet (120^m4).

The islands in the middle and widest part of the bay will now be described.

- 25 This group of islands consists of two large islands and four small ones, all joined by a shallow bank which practically extends to the northwest shore of St. Ignace Island.

Vert Island, the largest, is 4 $\frac{1}{2}$ miles long by 2 $\frac{1}{4}$ miles in width. It is sparsely wooded, having been burnt over, and for the most part is high. At the northeast point it is bold, attaining a height of 555 feet (169^m2) and near the west point is 30 a rocky cliff, 495 feet (150^m8) high. The shores of the island are deep-to and free from shoals to the west, north, and northeastward; in places the deep water comes close up. A bank, under 18 feet (5^m5) of water, makes off to the southwestward about 2 miles, almost joining a similar bank from Outan Island, the two banks being separated by a channel with 20 feet (6^m1) of water.

- 35 The main channel into Nipigon Bay passes close by the north and northwest parts of the island.

Light.—A *flashing white* light is exhibited, at an elevation of 24 feet (7^m3), from steel tower with a white daymark, on the northwestern side of Vert Island.

- 40 **Brulé Shoal**, with less than 6 feet (1^m8) of water over it, lies 1 $\frac{1}{2}$ miles east from the south extreme of Vert Island, called **MacKinnon Point**. A depth of 30 feet (9^m1) will be found a quarter of a mile to the eastward of this patch.

La Grange Island, 2 $\frac{1}{4}$ miles long west by north by 1 $\frac{1}{2}$ miles in greatest width and sparsely wooded, lies one mile west from Vert Island. The island is high and bold along the north shore, attaining a height of 630 feet (192^m0) about 45 the middle; the northwest point is a cliff and deep-to, but slopes to the southward where it is low. The bank, under 18 feet (5^m5) of water, extends in a south-southeast direction to within 1 $\frac{1}{2}$ miles of St. Ignace Island, and there are so many shoal spots with the above depth on them in the intervening space, that it may be said to be joined to the island

Chart 2312.

Outan Island, 95 feet (29^m0) high, wooded and 1¼ miles long, north and south, by half a mile across, lies one mile southward of La Grange Island.

The bank, under 18 feet (5^m5) of water, extends 3¼ miles to the westward from Outan Island, narrowing the channel to three-quarters of a mile.

5

Frog Island, quite small and 65 feet (19^m8) high, lies 1¾ miles southwestward of Outan Island and half a mile north of the edge of the deep water channel, which drops off suddenly at this point from 2 fathoms to 10 (3^m7 to 18^m3).

Burnt Island, the most westerly island of the group, one mile long by a quarter of a mile in width, lies with its northwest point 1½ miles southeast of Five Mile Point. The island is bare and attains a height of 300 feet (91^m4) near the north end. The northwest part, which is deep-to, is at the northwest extreme of the shallow bank extending from La Grange Island.

10

Clay Shoal, with 15 feet (4^m6) least water over it, lies about in the middle of the deep water passage one mile west of La Grange Island.

15

Clearing mark.—A conspicuous cliff at the west point of Vert Island seen north of La Grange Island, bearing east, will pass well north of this danger.

Buoy.—A black spar buoy marks the north end of Clay Shoal.

A shoal, with 4¾ fathoms (8^m5) least water over it, lies half a mile northeast of Clay Shoal.

20

Anchorage, in 6 fathoms (11^m0) over clay bottom, will be found between La Grange and Vert Islands, eastward of the south extreme of the former island, and with the middle of Crichton Island in line with the west tangent of Vert Island. This berth would not be comfortable in southerly weather.

North shore of St. Ignace Island.—From the head of Nipigon Strait, the north shore of St. Ignace Island takes a general northeast by east direction for 6 miles to Cape Nano. The bank, under 18 feet (5^m5) of water, makes off this shore from a quarter to 1½ miles, and is practically joined to the bank from La Grange Island.

25

Caribou Cove, 2½ miles northeast from Nipigon Strait, is a small boat cove with 2 fathoms (3^m7) of water in it. East of the cove are two conspicuous cliffs, one-half and 2 miles distant, the north and south slopes of whose summits serve as leading marks for the main channel in conjunction with St. Ignace summit.

30

Cape Nano is very abrupt, rising almost perpendicular 340 feet (103^m6) above the lake.

35

From Cape Nano, the shore of the island trends almost east, nearly straight for 2¾ miles to Burnt Point, being fronted by a bank about 300 yards (274^m3) wide; outside this bank, and one-third of a mile offshore, is a spot with 9 feet (2^m7) least water over it.

40

Clearing marks.—The north tangent of St. Ignace Island a little open of Burnt Point, bearing 098°, clears the shoal; the northwest tangent of St. Ignace Island near Caribou Cove in line with Cape Nano, bearing 240°, also clears this danger.

Burnt Point, the most northerly point of St. Ignace Island, is low. However, the land rises to a considerable height directly in the rear, cliffs showing to the east and west.

45

Charts 2312, 2303.

From Burnt Point, the abrupt north shore trends in a general easterly direction for 8 miles to the head of Moffat Strait. For the most part the shore is fronted by a narrow bank extending off from 200 to 400 yards (182^m9 to 365^m8); however, in the neighbourhood of Moffat Strait it is deep-to with cliffs to the water's edge.

Directions for Nipigon Bay.—Entering by Schreiber Channel, bound for Nipigon River, and having cleared Steamboat Channel, (page 450) steer for the north tangent of Simpson Island, heading 288°, for 8½ miles, and with the hollow between Confiance and Wilson Island astern. Pass a quarter of a mile off Simpson Island, and gradually bring the northeast tangent of Simpson Island astern, and the northeast tangent of Vert Island ahead, bearing 294°. This course will give all shoals off the northeast shore good clearance. Give Vert Island a berth of about 2 cables and, when off the northwest point, which is deep-to, steer a little south of the highest part of La Grange Island, heading 248°, for about 2 miles or until the east tangents of Outan and La Grange Islands are touching, when steer a due west course, giving La Grange Island a berth of 2 cables, for about 3 miles, when steer 293°, heading about half a mile off Cook Point and the cliff at the northwest point of La Grange Island, astern. Hold this course for 3 miles, until abreast Cook Point, when, giving the west entrance point of Nipigon River, which is deep-to, a berth of 2 cables, haul over to the anchorage off the east side about a mile above Cook Point.

If entrance be made by Wilson Channel, give the north shore of Salter Island a berth of half a mile and steer for the northeast extreme of Simpson Island, and proceed as before directed.

If by Simpson Channel, the same directions hold when the north point of Simpson Island is reached.

If by Moffat Strait, give the west entrance point at the head of the strait a clearance of a cable and steer 300°, for 15 miles, until Vert Island is reached, when proceed as before directed.

If entrance be made by Nipigon Strait, when abreast Point a la Gourganne bring Burnt and Frog Islands touching, bearing 331°. Hold this course for 4 miles or until the summit of St. Ignace Island is seen in the notch formed by the north and south falls of the two summits behind Caribou Cove, when hold this range astern, heading 288°, for 2½ miles until a prominent summit about 2 miles east of Nipigon River comes in line with the west tangent of Burnt Island; then head for a prominent rock cliff, about a mile east of the river, steering 350°, for 3½ miles until abreast the north end of Burnt Island, thence steer 100 yards (91^m4) off the abrupt, west entrance point to Nipigon River, heading 324°, for 4 miles to the entrance to the river, giving Five Mile Point a clearance of one-third of a mile. The above channel is buoyed with red and black spar buoys.

Nipigon Bay approaches.—Of the five channels entering Nipigon Bay, Simpson Channel is the best and safest for strangers, being wide and free from shoals, and, having Battle Island light at the southeast entrance point, it is easily picked up. Morn Point, on the opposite side of the entrance, may be seen for a great distance in clear weather.

Nipigon Strait, the west entrance channel, is used by vessels approaching from the westward. It is very narrow about the middle of Fluor Island, and requires local knowledge for entering.

The lake coast of the islands from Copper Island to Simpson Island is free from outstanding shoals, with the exception of a spot a quarter of a mile off the middle of Simpson Island. The south side of St. Ignace Island has many shoals and islands.

Chart 2303.

Anchorage.—Perfect shelter will be found in any desired depth in Moffat Strait, and entrance may be made in heavy weather.

Magnetic disturbance.—Local disturbance of the magnetic needle exists with varying intensity along the lake shore from Wilson to Fluor Islands, varying from one degree to 7° in the neighbourhood of the latter island, and mariners are warned to use great caution in approaching this locality in thick weather or at night. 5

Schreiber or North Channel, the north entrance channel to Nipigon Bay lies between a group of islands to the south, the largest of which are Copper and Wilson Islands, and the main shore to the northward from Schreiber Point to Rossport. It is a little over 2 miles wide, at the south entrance, but is contracted into narrow channels by the islands north of Wilson Island. The main channel of these lies between Wilson and Channel Islands. (See page 450). 10

Copper Island, the most easterly of a string of islands enclosing Nipigon Bay, lies with its eastern extremity, bearing 301° , distant $18\frac{3}{4}$ miles from Slate Islands lighthouse. It forms the south entrance point to Schreiber Channel. This island is about $4\frac{1}{4}$ miles long west by north and about $1\frac{1}{2}$ miles in greatest breadth. Its is densely wooded with three distinct summits, the middle one and the highest of which, 419 feet (127^m7) to the tops of trees, is about in the middle of the island. The north and northeast shores of the island are abrupt, being for the most part steep-to. The 5-fathom (9^m1) bank makes out about 400 yards (365^m8) southeasterly from the east point. The south shore should get a berth of from 200 to 400 yards (182^m9 to 365^m8). The west end of the island is joined to Wilson Island by shallow water. 15 20 25

Bread Rock, (Lat. $48^{\circ} 45' N.$, Long. $87^{\circ} 19' W.$) about the middle of the entrance to Schreiber Channel, with less than 6 feet (1^m8) of water over it, bears 125° , distant $1\frac{1}{2}$ miles from the eastern extreme of Copper Island. It is a very small spot, with deep water about it, except to the eastward, where 20 feet (6^m1) will be found 2 cables off. 30

Buoy.—A red and black spar buoy is moored close northeastward of Bread Rock.

Clearing marks.—No good marks could be found for clearing this danger however, the following will assist. The northeast tangent of Copper Island in line with a point nearer, just clears the shoalest part to the northeastward, and if kept open with the northeastern tangent, bearing 301° , will clear the shoal by half a mile. The trend of the straight, east shore of Collingwood Bay, which is abrupt and steep-to, leads over the shoal. Closing in the shore behind Schreiber Point or opening it to the westward will give a safe passage. 35

A spot, with 26 feet (7^m9) least water over it, lies eight-tenths of a mile northeastward of the eastern extreme of Copper Island. 40

McGarvey Shoal, with less than 6 feet (1^m8) of water over it, lying 800 yards (731^m5) north of the north shore of Copper Island, is formed of large boulders. It has deep water about it with the exception of the southeast end, where the three-fathom (5^m5) bank extends off 200 yards (182^m9). 45

Buoy.—A black spar buoy marks McGarvey Shoal.

Chart 2303.

Clearing marks.—The north side of Wilson Island in line with the north side of Confiance Island, bearing $281\frac{1}{4}^{\circ}$ and the southwest point of Channel Island in line with the south side of Confiance Island, bearing $284\frac{3}{4}^{\circ}$, clear this 5 danger.

McGarvey Shoal is the only danger to be avoided, entering or leaving the channel between Wilson and Channel Islands, and a mid-channel course will carry through in good water.

10 **Anchorage.**—The water is deep about Copper Island, but, anchorage may be had to the northwestward of the island, in the bight between Copper and Wilson Islands, in from 12 to 15 fathoms (21^m9 to 27^m4) of water over mud bottom.

15 **Wilson Island** is only separated from Copper Island by a shallow passage about 300 yards (274^m3) wide, and through which 12 feet (3^m7) of water may be carried by holding close to the latter island. The island is pear shaped, with the narrow part towards the northwestward, and is $4\frac{1}{4}$ miles long and $2\frac{3}{4}$ miles wide. It is densely wooded with several tree summits showing, the highest of which, 420 feet (128^m0) high, is towards the northwestern part of the island. At the northwest point, the land is high, and a conspicuous cliff shows for a considerable distance to seaward. The north shore is steep-to; about three-quarters of a mile 20 east of the northwest point, a small deep bay makes in, with from 8 to 9 fathoms (14^m6 to 16^m5) of water, but the narrow entrance is closed up by a gravel bar.

25 **Tracy Shoal**, with its shoalest part of 14 feet (4^m3) half a mile southwest of the northwest point of Wilson Island, is a narrow boulder bank, steep-to to the northwestward, but extends 300 yards (274^m3) to the south-southeastward, under a depth of 18 feet (5^m5). The remainder of the west shore is free from shoals.

30 **Boat Harbour.**—Just north of the southwest point of Wilson Island, the coastline is indented with a small boat harbour extending in an easterly direction about half a mile, where good shelter will be found in 4 fathoms (7^m3) of water. A shallow bank makes out from the north side of the entrance, terminating in a small dry rock beyond which the water is good. Entering, hold along the south shore which is steep-to. A small island lies off the entrance. The south shore of Wilson Island is about steep-to. At the southeast point there are two small boat 35 harbours, but they are both open to the south. Shoal water extends off the southeast point to the eastward, also from an island to the north in the same direction, but both reefs terminate in dry rocks beyond which the water is good.

Cobinosh Island, a third of a mile south of Wilson Island, is $1\frac{1}{4}$ miles long and a third of a mile in greatest breadth. It is heavily wooded.

40 **Channel Island** lies north of Wilson Island, from which it is separated by a passage locally known as **Steamboat Channel**, 2 cables in width and through which 6 fathoms (11^m0) of water may be carried. The island, triangular in shape with the apex to the north, is a little over 2 miles long and nine-tenths of a mile across. It is densely wooded, the top of the trees at the highest part being 300 feet (91^m4) above the water. The shores are clean with the exception of the north point.

45 A rock, with less than one foot (0^m3) of water over it, lies east-northeast 2 cables from the north point of Channel Island. A depth of 6 fathoms (11^m0) will be found close outside it. A black spar buoy is moored northward of the rock.

Chart 2303.

Kingcome Island, just separated from Channel Island, is 400 yards (365^m8) long east by south and 100 yards (91^m4) across and is wooded. The east point is steep-to and a small dry rock to the north is steep-to on the north side; to the south 14 feet (4^m3) of water will be found 75 yards (68^m6) off. 5

Confiance Island, locally known as Steamboat Island because the trees give it that appearance at a distance, is small and is steep-to. It lies 750 yards (685^m7) southeastward of the southeast point of Kingcome Island.

Healey Island, the nearest part of which is about 650 yards (594^m3) north by west from the north point of Channel Island, is $1\frac{3}{4}$ miles long and half a mile in greatest width at the west end, and gradually tapers to a narrow point at the east end. The island has been burnt over and has very few trees left. The highest part of 172 feet (52^m4) is towards the west end. The north shore is steep-to, with the exception of a spit, which makes out a quarter of a mile east of the west end and half-way across Boone Island to 8 feet (2^m4) of water; 4 fathoms (7^m3) of water will be found close outside it and this depth can be carried through between the islands. The east point is steep-to but the middle of the south side should receive a berth of 200 yards (182^m9). The northwest and southwest points are steep-to, and 6 fathoms (11^m0) can be carried through the narrow channel between Healey and Quarry Islands by holding close to Healey Island. 10 15 20

Quarry Island, the east point of which is separated from Healey Island by a little over 100 yards (91^m4) is about three-quarters of a mile long and two-thirds of a mile wide. The north and west sides are steep-to, the latter being a conspicuous cliff over 200 feet (61^m0) high. The island is densely wooded, the highest part of 287 feet (87^m5) being near the west side. A depth of 14 feet (4^m3) will be found 150 yards (137^m2) off the south side. The north point is joined to a small island, 200 yards (182^m9) to the north, by very shallow water. 25

Boone Island, close north of Healey Island, is 600 yards (548^m6) long east and west and 250 yards (228^m6) in greatest breadth, near the west end. It is 90 feet (27^m4) high to the top of the trees. The island is steep-to on the north and west sides, but the south side is fronted with shoal water extending off 100 yards (91^m4). There is a narrow passage, with 4 fathoms (7^m3) of water, between Boone and Healey Islands by holding two-thirds of the distance towards the former island. 30

Directions.—Schreiber Channel.—Entering Schreiber Channel from the eastward, hold well over towards the north shore, which is steep-to, to avoid Bread Rock (page 449), passing about half a mile off Schreiber Point. After passing Schreiber Point, steer to pass a short distance north of Copper Island. When abreast the north point of Copper Island, steer to pass either inside or north of McGarvey Shoal (page 449) by keeping Confiance Island well in on the land on either side of the channel. Take a mid-channel course in the passage between Channel and Wilson Islands. If bound for Rossport, when abreast Schreiber Point, steer for the east end of Healey Island, until half a mile off the island, when haul to the westward and take mid-channel between Channel and Healey Islands, steering for the southern part of Quarry Island. When the gap between Healey and Quarry Islands opens, haul up for it and pass through, holding close to Healey Island, and entering Rossport Harbour by the passage between Nicol Island and the next island to the southwestward, by keeping the latter well aboard, to avoid the spit from Nicol Island. 35 40 45

In thick weather or at night, do not attempt this passage, and a stranger should not use it at any time. 50

Chart 2303.

- Battle Island** forms the southwest and southeast entrance points to Wilson and Simpson Channels, respectively. The island is a little over a mile long east and west with a greatest breadth of a third of a mile near the west end. It is wooded and the highest part of the island, 80 feet (24^m4) high, bare rock, will be found at the southwest point where the lighthouse is placed. The west side and the southwest points are steep-to and the south side and east end almost so. The north shore is indented by a shallow bay into which 12 feet (3^m7) of water may be carried, between the two small islands off the entrance.
- 10 A small spot, with deep water about it, under a depth of 18 feet (5^m5) lies 350 yards (320^m0) west from the northwest point of Battle Island.

- Clearing marks.**—Two points on the north side of Battle Island in line, bearing 100°, clear this danger by 100 yards (91^m4) to the north. Two points on the west side of Salter Island in line, bearing 325°, pass 300 yards (274^m3) to the westward of the shoal.

- Light.**—(Lat. 48° 45' N., Long. 87° 33' W.)—On the southwest point of Battle Island is erected a white, octagonal, reinforced concrete tower, surmounted by a red iron lantern, which from an elevation of 118 feet (36^m0) exhibits a *white, group flashing* light visible 18 (16 nautical) miles, showing 3 flashes every 24 seconds. About 300 feet (91^m4) northeasterly from the lighthouse is the keeper's dwelling—a white, rectangular, wooden building.

Fog signal.—From a white, square, wooden building close east of the light-house a diaphone gives a blast of 3½ seconds duration every 30 seconds.

- Salter Island Group**, a little over half a mile north of Battle Island, comprises Salter Island and two smaller islands close south of it. The group is 4 miles long and half that distance across and densely wooded. The northeast and west sides of Salter Island are steep-to. Shoal water extends 200 yards (182^m9) off the northwest point, terminating in a small island which is steep-to.

- Rolette Shoal**, with less than 6 feet (1^m8) of water, is formed of boulders and lies 700 yards (640^m0) to the northwestward from the northwest point of Salter Island. The spot is quite small and has deep water about it.

Clearing marks.—The channel between Channel and Wilson Islands, open north of Salter Island, will clear this shoal. Also Battle Island light in sight west of Salter Island passes three-quarters of a mile off this danger.

- Shoal water extends 250 yards (228^m6) off the east side of Salter Island, contracting Wilson Channel to a space of 450 yards (411^m5) abreast Tracy Shoal (page 450).

- The southwest island of the group is steep-to on its south and west sides, however, a shoal with less than 6 feet (1^m8) of water over it, lies 450 yards (411^m5) south by west from the east end of the island, contracting the Battle Island channel to 600 yards (548^m6). In passing through this channel, hold well over towards Battle Island.

- Chubby Harbour.**—The southeast part of Salter Island is indented by a narrow bay that runs about a mile northerly, the entrance, about a third of a mile in width, being enclosed by the island just south of Salter Island. There are three entrances to the harbour, from the south, east, and west, the latter being much the best and the entrance to which is between the southwest point

Chart 2303.

of Salter Island and the island to the south. Entering, take mid-channel, heading 080°, and hold this course until the harbour opens up, passing mid-channel between two small islands, where the least depth of 4 fathoms (7^m3) will be found.

5

By the east entrance, 14 feet (4^m3) of water can be carried in, but the channel is very narrow. The south entrance has a small island in the middle which contracts the channel.

Anchorage, in perfect shelter, may be had over good holding ground in from 6 to 20 fathoms (11^m0 to 36^m6) of water. The space at the head of the bay is about a quarter of a mile wide. 10

Wilson Channel, which lies between Wilson and Salter Islands, is over a mile wide at its mouth off the east end of Battle Island; however, it is narrowed to 450 yards (411^m5) abreast Tracy Shoal as already stated.

Directions.—Entering, leave Battle Island a little over half a mile on the port hand and steer 345°, heading on the west tangent of Rossport Point. This course will carry in with a least depth of 6 fathoms (11^m0) of water. 15

In thick weather or at night, do not attempt the passage if drawing more than 14 feet (4^m3) of water.

This channel is never used except by small craft bound for Rossport. 20

Simpson Channel, 12 miles west from Schreiber Point is much the best and safest passage into Nipigon Bay, and the most used approaching from the eastward. It is 1½ miles in width at the narrowest part and quite free from shoals.

Directions.—Entering, leave Battle Island light three-quarters of a mile on the starboard hand and steer 328°, to pass the same distance off the northeast point of Simpson Island. If bound for Nipigon River, proceed as directed on page 448. 25

Simpson Island, separated from the east end of St. Ignace Island by Moffat Strait, is 9 miles long by about 6 miles in greatest width towards the south part of the island. The land rises to a height of over 400 feet (121^m9) at the southeast point and west side. The western part is well covered with second growth spruce, birch, and poplar, but the east part is bare. 30

As before stated, the north shore of the island is deep-to and the same remark applies to the east side, with the exception of a slight bay about the middle of the side, which has shoal water along the shore. 35

Light.—A *flashing white* light is exhibited, at an elevation of 32 feet (9^m8), from a steel tower with a white daymark, on the northeastern extremity of Simpson Island.

Morn Point, the southeast extreme of the island, is quite bare and deep-to. About the middle of the point, the land rises to a height of 405 feet (123^m4), showing prominently from a distance. 40

Morn Harbour, in the southwest side of the point of the same name has **Raymond Island** in the entrance, which affords protection. The entrance is to the eastward of the island and the harbour extends in about a mile. The space, though limited, affords perfect shelter from all winds, in from 3 to 5 fathoms (5^m5 to 9^m1) of water over mud bottom. 45

Chart 2303.

From Morn Point, the south shore trends in a general west by south direction for 5 miles to Grebe Point, and is free from outstanding shoals with the exception of **Legault Island**, small and 20 feet (6^m1) high, which lies southwest by west three-quarters of a mile from the south point of Raymond Island, and a spot, with 10 feet (3^m0) least water, which lies a quarter of a mile outside the rocks in the entrance to McKay Cove, 2 miles west from Morn Harbour.

Grebe Point, (Lat. 48° 44' N., Long. 87° 42' W.), the south point of Simpson Island, is thickly wooded with poplar, spruce, and birch and rises to a height of 10 250 feet (76^m2).

A spot, with 10 feet (3^m0) of water over it, lies 1¼ cables off the point.

Woodbine Harbour.—From Grebe Point, the coast takes a general direction of west-northwest for 2½ miles to Grotto Point, the southeast entrance point to Moffat Strait. About the middle of this stretch an inlet, with islands across 15 its mouth, called Woodbine Harbour, makes in. Although the space is very limited, perfect shelter for small craft will be found, in 5 fathoms (9^m1) of water over mud bottom.

The entrance is to the eastward of the islands and passing in keep the main shore close aboard to avoid a spit which makes off the island on the port hand.

20 Approaching from the southward, care must be taken to avoid the 10-foot (3^m0) spot off Grebe Point.

Dunmore Island, 70 feet (21^m3) high, and almost deep-to, is the outer one of the group forming Woodbine Harbour.

A small rock, 5 feet (1^m5) high and deep-to directly south, lies 100 yards 25 (91^m4) off the southeast point of Dunmore Island.

St. Ignace Island, the largest and highest of the group enclosing Nipigon Bay, is 15 miles long east and west by 11½ miles in greatest width, near the western end. For the most part, the island has been burnt over, however, it is thickly wooded by second growth spruce, poplar, and birch in parts, chiefly in 30 the hollows between the hills. Towards the southeast part it attains an altitude of 1,262 feet (384^m7) at a bare summit, the site of a United States triangulation station.

Moffat Strait lies about 10 miles west of Battle Island light, and is 5 miles long. The southern portion, 3½ miles long by 1½ miles at the widest part is 35 almost deep-to and quite free from outstanding shoals, the shores being fringed with a shallow bank extending off from one-quarter to 1¼ cables. The northern 1½ miles is through a shallow bank joining St. Ignace and Simpson Islands, and over which not more than 14 feet (4^m3) of water can be carried. Local knowledge is necessary.

40 **Anchorage**, in any desired depth with perfect shelter from all winds, may be had towards the northern portion of the strait. To the southward, a good berth will be found off Wickham Bay, in 10 fathoms (18^m3) of water over mud bottom, also northeast of Quigley Island.

45 **Bead Island**, on the west side of the entrance to Moffat Strait, is separated from St. Ignace Island by a strait, a cable in width, and a depth of 5 fathoms (9^m1), but a sunken rock in the west entrance renders it unfit for any but small craft.

Chart 2303.

Grotto Point is the southeastern entrance point to Moffat Strait, being separated from Bead Island by a passage half a mile wide. The point is comparatively low and rocky, deep-to on the south side. Off the extreme of the point is a small dry rock with shoal water half a cable outside it; it can be approached to within 2 cables with safety. 5

Quigley Island, a quarter of a mile north of Grotto Point, has deep water close outside.

St. Ignace Harbour, to the westward of Moffat Strait and in the southeastern part of the island of the same name, extends in $2\frac{3}{4}$ miles northwest by north from Bignell Point. Half a mile from the head, the harbour narrows to $1\frac{1}{2}$ cables in width forming a small basin inside which, limited, though good shelter, may be had in $4\frac{3}{4}$ fathoms (8^m5) of water over sand bottom. Though open to the southeastward, the sea does not appear to enter the basin at the head of the harbour. 15

Bignell Point, (*Lat.* $48^\circ 45' N.$, *Long.* $87^\circ 47' W.$), $1\frac{1}{2}$ miles west from Grotto Point, is fronted by a number of small islands and shoals extending eastward 3 cables and terminating in **Fisher Rock**, just above the surface, but almost deep-to and which can always be seen. To the southeastward of the point, the shoal bank makes out almost 4 cables, or one cable past the outer dry rock, and should receive a wide berth. 20

Clearing mark.—The east shores of St. Ignace and Bead Islands in line, bearing 023° , passes about one-third of a mile off Bignell Point Shoal. Bead Island being deep-to may be kept close aboard entering. The shores of St. Ignace Harbour above Bead Island are clean and free from shoals. 25

In thick weather or at night, care should be exercised in approaching this locality to give Bignell Point a wide berth, and rather make the land outside Grotto Point, which is deep-to and can be rounded by using the lead. During the survey of this section, Moffat Strait was entered on more than one occasion during very dense fog, passing close by Grotto Point, the breakers off the point being barely visible at 50 yards (45^m7) distance, but when the entrance was passed the strait was found comparatively free from fog, the bank being clear cut across the entrance. 30

Giraoud Island, just separated from the southeast part of St. Ignace Island, is 75 feet (22^m9) high and deep-to. The same remark applies to the coast immediately west of it. 35

From Giraoud Island to Newash Point, the most southerly point of St. Ignace Island, a distance of 10 miles, a large wide open bay makes in 3 miles from the line of the points, and is studded with many islands and shoals.

McNab Harbour is a small boat harbour, quite open to the south, making in one mile west from Giraoud Island. 40

Chart 2302.

Armour Harbour, the east entrance to which is 2 miles west from Giraoud Island, is formed by an island of the same name and Hope Island to the westward. Anchorage, with shelter from all winds, will be found in 5 fathoms (9^m1), mud bottom, in the northeast part of the harbour; the anchorage is about $3\frac{1}{2}$ cables in extent. Entrance may be made from the east or west, but the latter is much the better. 45

Chart 2302.

Armour Island, $1\frac{1}{4}$ miles long by one-third of a mile across and 183 feet (55^m8) high, is separated at its northeast part from St. Ignace Island by a narrow passage 75 yards (68^m6) wide, and through which 20 feet (6^m1) of water may be carried. From the southeast point of Armour Island, shoal water extends in a southerly direction 3 cables, beyond which the water is deep.

Thorne Shoal, the most outstanding shoal off here, with less than 6 feet (1^m8) of water on it, and deep-to, lies 7 cables south of the south point of Armour Island.

Reid Island, 22 feet (6^m7) high, small and deep-to, is about 6 cables west from the above shoal.

Clearing marks.—Agate and Talbot Islands touching, bearing 246° , or the channel between them just closed, passes about 2 cables south of this danger.

Hope Island, half a mile long and 300 yards (274^m3) in width, lies half a mile west from the west extreme of Armour Island. The west end of this island is deep-to, so also is the outer dry rock off Fraser Point, leaving a clear entrance space of $3\frac{1}{2}$ cables into Armour Harbour; however, care should be taken to avoid the 11-foot (3^m4) rock, lying three-quarters of a cable off the northwest point of Hope Island.

An uncharted rock, with a depth of 3 feet (0^m9) over it, has been reported to lie $4\frac{1}{2}$ cables 022° from the most westerly point of Hope Island; there is deep water on all sides of the rock.

Fraser Point, (Lat. $48^\circ 45'$ N. Long. $87^\circ 55'$ W.), the west entrance point to the west or main entrance to Armour Harbour, is half a mile west by north from Hope Island.

A small island lies 75 yards (63^m6) southeast from the point and beyond it shallow water makes out still further, terminating in a rock, 4 feet (1^m2) high, southeast by south $1\frac{1}{4}$ cables from the extreme of the point.

A group of boulders, 4 feet (1^m2) high, lies $1\frac{3}{4}$ cables off the northwestern corner of Armour Harbour and northeast $2\frac{1}{2}$ cables from Fraser Point.

Behind Fraser Point the land rises to a height of from 300 to 400 feet (91^m4 to 121^m9).

From Fraser Point, the shore trends in a westerly direction for 2 miles to Pope Point, the east entrance point to Duncan Cove, and is fronted by shoal water extending off about one cable.

Burnet Island, 20 feet (6^m1) high and quite small, lies about in the middle of the gap between Hope and Armour Islands and 3 cables south to the line of the islands. From this island, shoal water extends in an east-southeast direction 2 cables, south $1\frac{1}{2}$ cables, and two spots, with less than 6 feet (1^m8) of water over them, lie between this island and Hope Island. This leaves a deep water channel $1\frac{3}{4}$ cables wide between it and Armour Island.

Whelan Shoal, with 11 feet (3^m4) over it and deep-to, lies $1\frac{3}{4}$ miles southwestward from the west point of Hope Island.

Nest Island, 35 feet (10^m7) high, lies one mile southwestward of Fraser Point and has shoal water $1\frac{1}{2}$ cables to the southward.

Another island lies 2 cables northwest from Nest Island, with shallow water making out half a cable about it.

Duncan Cove, a little over 2 miles west from Fraser Point, is a wide, open bay fringed with shallow water from one-half to 2 cables in width.

Chart 2302.

Bowman Island, in the western part of the bay between Giraoud Island and Newash Point, is the largest and inner of three islands almost joined by shallow water. It is $1\frac{3}{4}$ miles long by a little over half a mile in greatest width at the highest part of 314 feet (95^m7), near the northwest end of the island. At the northwest point, the island is separated from St. Ignace Island by a narrow passage $1\frac{1}{4}$ cables wide, and through which 18 feet (5^m5) of water may be carried; however, the passage has a sharp bend and cannot be used by anything but small craft. With the exception of the northeast side of the island, which is deep-to, the shores are fringed with shoal water which makes out $2\frac{1}{2}$ cables in a south-southeast direction from the southwest point. 5 10

Paradise and Owl Islands lie to the south of Bowman Island. Shoal water makes out 3 cables south of the south end of Owl Island. A protected anchorage is located between Bowman and Owl Islands.

Newash Point, (*Lat.* $48^{\circ} 41' N.$, *Long.* $88^{\circ} 01' W.$), the most southerly part of St. Ignace Island and 10 miles west-southwestward from Giraoud Island, has dry rocks and shoal water extending off 4 cables in a southeasterly direction. From this point, the shore of the island takes a general northerly direction for 3 miles, to abreast the northwest end of Bowman Island, and for the first 2 miles is fronted by shallow water and shoals, extending off 4 cables. 15 20

Agate Island, three-quarters of a mile east of Newash Point, is deep-to on the north side and fringed with shoal water for half a cable about the remainder of the island. A rock, awash, lies 3 cables southwestward from the southwest point of Agate Island. Another rock, one foot (0^m3) high, is situated $2\frac{3}{4}$ cables north from the northwest point of the same island. 25

A rock, with less than 6 feet (1^m8) of water over it, lies 2 cables west by north from the southwest point of Agate Island.

Agate Island, in conjunction with the Bowman Island group, encloses a very snug anchorage between the rock, one foot (0^m3) high, mentioned above, and the bank off Owl Island, 4 cables distant from each. 30

Talbot Island has the foundation of a lighthouse near its northeast extremity. This point lies $6\frac{1}{2}$ miles southwestward of Giraoud Island. A depth of 18 feet (5^m5) will be found one cable off the southeast side. **Angelica and Longcroft Islands** lie southwestward of Talbot Island and inside these islands is a deep channel. 35

Rowen Island, 60 feet (18^m3) high, lies $2\frac{1}{2}$ cables northwest from Talbot Island. Shoal water makes out 2 cables southwest from this island.

Josephine Shoal, one cable in diameter, with less than 6 feet (1^m8) of water over its shoalest part, lies southwest by west 4 cables from Longcroft Island. To avoid Josephine Shoal, keep the north side of Talbot Island in sight 40 north of Longcroft Island.

Anchorage.—As before stated, anchorage may be had in perfect shelter, in 8 fathoms (14^m6) over mud bottom, behind the Bowman Island Group. Entrance may be made by giving Angelica Island a berth of 100 yards (91^m4), to avoid the 14-foot (4^m3) spot in the middle of the gap, and Agate Island, one cable, and come to anchor with the small dry rock off Longcroft Island in line with the northeast point of Agate Island. Entrance may also be made north of Talbot Island, in which case care should be taken to avoid the shoal water off Owl Island. 45

Chart 2302.

Mystery Island, 79 feet (24^m1) high and 300 yards (274^m3) across, lies $1\frac{1}{4}$ miles south of Newash Point. The north point of the island is deep-to but off the remainder of the island, shoal water makes out three-quarters of a cable; 5 from the southwest point 11 feet (3^m4) of water will be found 2 cables southwest and a rock, 5 feet (1^m5) high, half a cable in the same direction.

Puff Island lies one mile southwest by west from Mystery Island. The northwest shore of the island is deep-to and the channel passes $1\frac{1}{2}$ cables off this shore. Islands and rocks, surrounded by shoal water, extend $1\frac{1}{2}$ miles south- 10 westward from the southwest point of the island. There are channels through these, but they are not recommended.

Anchorage, in 12 fathoms (21^m9) of water over mud bottom, may be had behind Puff Island, but in heavy southerly weather considerable swell enters, and makes it an uncomfortable berth.

Provost Island, 26 feet (7^m9) high, the most southwesterly of the group, lies $1\frac{1}{8}$ miles eastward from the south point of Fluor Island. The channel passes one cable off the island.

A rock, with less than 6 feet (1^m8) of water, will be found three-quarters of a cable southwest from Provost Island, and 8 feet (2^m4) of water, half a cable 20 further in the same direction.

Cedar Island, 47 feet (14^m3) high and a quarter of a mile long northeast and southwest, is quite deep-to on the west or channel side, but shoal water extends three-quarters of a cable to the southeastward. Its southwest point lies $2\frac{1}{4}$ miles northeast of Lamb Island light.

Dacres Rock, (*Lat.* $48^{\circ} 38' N.$, *Long.* $88^{\circ} 07' W.$), 2 feet (0^m6) high, lying southeast by south $1\frac{3}{4}$ cables from Stark Point, the south extreme of Fluor Island, narrows the channel abreast Cedar Island to 2 cables.

Blind Channel.—From Newash Point of St. Ignace Island, the shore trends west for $1\frac{1}{2}$ miles, thence northwest for the same distance to **Stowe Point**, the 30 southwest point of St. Ignace Island and the northeast entrance point to the Blind Channel. The channel is a passage about a third of a mile in width over a shallow bank connecting St. Ignac and Fluor Islands, with 2 feet (0^m6) of water.

Birch Island, 57 feet (17^m4) high, 300 yards (274^m3) long north and south by about 50 yards (45^m7) across, lies three-quarters of a mile southwest from the 35 south extreme of Newash Point and $1\frac{3}{4}$ cables northwest of the steamer track. It is deep-to on all sides.

Fluor Island, $4\frac{3}{4}$ miles long northeast and southwest by 2 miles across at the northern part, is thickly wooded with spruce, poplar, and birch. Its south point, bears northeast by north, distant $2\frac{1}{2}$ miles from Lamb Island light. The 40 island is really divided into three parts by narrow, swampy channels about the middle part. The southern or higher part rises to a height of 705 feet (214^m9) and the southwestern coast is formed by abrupt, rocky cliffs deep-to in places. The northern portion of the island is surrounded by shallow water, with the exception of the northwestern point, which is deep-to half a mile southwest from 45 Beeton Point, the north point of the island.

Tisdall Island, 60 feet (18^m3) high and just separated from the most easterly point of Fluor Island by shallow water, is almost deep-to to the eastward.

A group of rocks, 9 feet (2^m7) high and deep-to, lie southeast by east 2 cables from the south point of Tisdall Island.

Chart 2302.

Irvine Island, 2 cables south of Tisdall Island and the same distance off Fluor Island, is 57 feet (17^m4) high and deep-to to the eastward. At this point, the main channel is 3 cables wide to Puff Island.

Willard Island, on the west side of the channel and seven-eighths of a mile west from the southwest extreme of Puff Island is 100 feet (30^m5) high to tops of trees, and deep-to to the southward and eastward. 5

Schank Rock, with less than 6 feet (1^m8) of water over it, is the worst danger in this part of the channel, in that it is formed of dark rocks which do not show up; however, it can be located from the small rock, 2 feet (0^m6) high, lying 1½ cables to the north. It lies southwest, 3½ cables, from Willard Island and 1½ cables northwest from the steamer track. To clear this danger, hold well over to Provost Island which is deep-to. 10

Directions for the inside channel from Talbot Island to the south end of Fluor Island.—Approaching from the eastward, steer for the highest part of Talbot Island. Entering the channel give the cliff a berth of half a cable, and steer for mid-channel between Agate and Longcroft Islands. Pass half a cable off the latter island and steer for the north fall of Puff Island. After leaving Longcroft Island, do not lose sight of Talbot Island, to avoid Josephine Shoal, and at the same time do not open Talbot Island north of Longcroft. Pass a cable off the north point of Puff Island, and give the island a general berth of 1½ cables. To avoid Schank Rock, steer to pass one cable off Provost Island and the same distance off Cedar Island. If bound for Nipigon Strait, care must be taken not to change course to soon, when abreast Cedar Island, to avoid the extreme of the shoal water off Dacres Rock, but hold the course until abreast the southwest end of Cedar Island. 15 20 25

Nipigon Strait, the most westerly of the channels into Nipigon Bay, and the one always used by vessels approaching from the westward, is generally entered east of Lamb Island, where the passage is about 2 miles in width. A good passage will be found close east of Spar Island and also, if not drawing more than 18 feet (5^m5) of water, inside the same island. From the entrance, between Moss and Fluor Islands, the strait extends in a northerly direction for 12 miles. 30

Leading lights.—Leading lights (*Lat.* 48° 42' N., *Long.* 88° 06' W.), mark the channel through the narrows to Nipigon Strait. The front light, approximately opposite Beeton Point on Fluor Island, exhibits a *fixed white* light, at an elevation of 32 feet (9^m8), from a wooden tower with white daymark. The rear light, situated 250 feet (76^m2), 016°, from the front light, exhibits a *fixed white* light from a steel tower with white daymark, at an elevation of 39 feet (11^m9). 35

Anchorage may be had abreast the middle of Fluor Island, south of Sarrat Island, in 10 fathoms (18^m3) over mud bottom. If better shelter be desired, a good berth will be found north of Fluor Island with Blind Channel just closed, in 7 fathoms (12^m8) of water over mud bottom. For smaller steamers, a very snug anchorage will be found inside the north end of Moss Island, or a ship may be tied up to the steep rock bank of Moss Island about 450 yards (411^m5) south of the entrance point. 40 45

Lamb Island lies 2½ miles southwestward from the southwest point of Fluor Island. A spot, with 8 feet (2^m4) of water over it, lies 600 yards (548^m6) southwestward of the island. Shoal water extends from the island to within 200 yards (182^m9) of the 8-foot (2^m4) spot. **Sovereign Rock**, with 13 feet (4^m0) 50

Chart 2302.

of water over it, lies three-quarters of a mile from Lamb Island light in the same direction. This is the outstanding danger south of Lamb Island. **Newcombe Rock**, with less than 6 feet (1^m8) of water over it, lies north by west 3 cables from
 5 the lighthouse, and a spot, with 7 feet (2^m1) over it, lies 350 yards (320^m0) west of Newcombe Rock. The above shoals, in conjunction with a 16-foot (4^m9) spot lying $2\frac{1}{4}$ cables southeast from the southeast point of Spar Island, contract the deep water passage east of Spar Island to 200 yards (182^m9).

Light.—About the middle of the highest part of Lamb Island is erected
 10 a white, square, wooden tower, with keeper's dwelling attached, surmounted by a red lantern, which from a height of 90 feet (27^m4), exhibits a *flashing white* light, *every 25 seconds*, visible 17 (15 nautical) miles.

Fog signal.—Near the lighthouse on Lamb Island, from a rectangular, white, wooden building, a diaphone sounds 2 blasts of $2\frac{1}{2}$ seconds duration *every*
 15 *minute*, thus: *blast $2\frac{1}{2}$ seconds*; *silent 3 seconds*; *blast $2\frac{1}{2}$ seconds*; *silent 52 seconds*.

Moss Island, the south extreme of which is $1\frac{3}{4}$ miles west from the south point of Fluor Island, is a little over 2 miles long by one-third of a mile across, and rises to a height of 322 feet (98^m1) to the tops of the trees near the south end. It is separated from the main shore by a narrow passage 60 yards (54^m9) across
 20 at the narrowest part, and through which 7 feet (2^m1) of water may be carried. Some dry rocks lie 75 yards (68^m6) off the south point, and 5 feet (1^m5) of water will be found 150 yards (137^m2) off. A small rock, with less than 6 feet (1^m8) of water over it, and deep-to lies 6 cables northeasterly from the south point and one cable from the shore of the island. Between this rock and the south end of
 25 the island, a shoal bank, with less than 6 feet (1^m8) of water over it, extends offshore $1\frac{1}{4}$ cables.

A shoal, with 13 feet (4^m0) least water over it, and deep-to outside lies south-southeast $2\frac{3}{4}$ cables from the north extreme of Moss Island and $1\frac{1}{2}$ cables offshore. This danger is the most outstanding in this part of the strait, but the track
 30 generally followed passes about 300 yards (274^m3) off the abrupt shore of Fluor Island, which is almost deep-to.

From Stark Point, the west shore is fronted by shallow water for three-quarters of a mile extending 100 yards (91^m4) off, beyond which the water is deep. For the next $1\frac{1}{2}$ miles, the island is almost deep-to; however, beyond this
 35 a bank makes off which, in conjunction with a bank from the main shore, narrows the main channel to $2\frac{1}{2}$ cables in width.

Ford Island, (*Lat. $48^{\circ} 41' N.$, Long. $88^{\circ} 06' W.$*), 6 feet (1^m8) high, is on the edge of the shallow water making off into the bay, between the north and south parts of Fluor Island, and 3 cables southwestward from the nearest point of the
 40 northern part of the island. From Ford Island, the edge of the shallow shore-bank trends in a south-southwest direction for 4 cables, terminating in a small dry rock beyond which the water is deep.

Off the western part of the northern section of Fluor Island, rocks with less than 6 feet (1^m8) of water over them, lie off 2 cables, the steamer passage being $1\frac{1}{2}$
 45 cables outside them. From this shoal, the shallow bank trends straight for the northwest point of Fluor Island, which is deep-to, the channel being only one cable wide at this point, as 8 feet (2^m4) of water will be found $1\frac{1}{2}$ cables off the main shore abreast.

Sarrat Island, 6 feet (1^m8) high, and quite small is the best mark to pick
 50 up at the narrowing of the channel, as the steamer track passes 2 cables off. It lies northeast one mile from the north extreme of Moss Island and 500 yards

Chart 2302.

(457^m2) off the main shore. From the island, shoal water extends 1½ cables south, three-quarters of a cable east; 1½ cables northeastward, 7 feet (2^m1) of water will be found.

McGhie Rock, 3 feet (0^m9) high, lies 5 cables north-northeast from Sarrat Island and 1¼ cables off the main shore. Shoal water extends 100 yards (91^m4) to the eastward and the steamer track is 1¼ cables from the rock. 5

Buoys.—The narrow part of Nipigon Strait, from about a third of a mile south and the same distance north of Ford Island, is marked by two red and two black spar buoys. The black buoys have a band of white reflectors encircling the buoy near the top, and the red buoys, red reflectors. 10

Beeton Point, the most northerly point of Fluor Island, is fronted by a shallow bank extending north-northwest 1¼ cables to 16 feet (4^m9) of water, then dropping suddenly to deep water.

A rock, with 5 feet (1^m5) of water over it, lies 2 cables off the main shore and northwest 5 cables from Beeton Point. Shoal water extends out three-quarters of a cable off this rock. 15

Above Fluor Island, the strait widens to 1¼ miles and gradually tapers to half that width at the head. The east shore is fronted by shoal water, extending off one to 3 cables, gradually tapering into the shoreline about a mile below the head. The west bank is much the cleaner, having a narrow fringe of shallow water on an average of 100 yards (91^m4) off the points, and should be favoured for three-quarters of the distance to the head. 20

Directions.—The safest entrance into Nipigon Strait is between Lamb and Fluor Islands. By keeping in mid-channel, and guided by the spar buoys and leading lights in the vicinity of Ford Island, all dangers are avoided as far as Beeton Point. For 2 miles above this point, favour the west shore and thence a mid-channel course will lead safely into Nipigon Bay. 25

Caution.—On account of the local disturbance of the magnetic needle in this locality, great caution should be exercised in thick weather or at night 30

For those locally acquainted, a good channel exists west of Lamb Island light and 200 yards (182^m9) off Spar Island, with the west fall of Beeton Point summit in line with the west tangent of Fluor Island, bearing 025°.

Charts 2302, 2301.

LAMB ISLAND TO THUNDER CAPE, INCLUDING BLACK BAY.— From Lamb Island, the coast trends in a general southwesterly direction for 29½ miles to Porphyry Island. This stretch of shore is broken up by deep bays, and beyond Shesheeb Point is fronted by an almost continuous string of islands and shoals, inside of which a deep steamer passage will be found. On account of the many outstanding dangers, this shore should be approached with caution, especially in the neighbourhood of Point Magnet, where considerable local magnetic disturbance exists. 40

The main shore is really a peninsula forming the southeast side of Black Bay, to which it is only about a mile across from the head of Shesheeb Bay.

North from Porphyry and Edward Islands, Black Bay makes in a northeasterly direction. West by south 13¾ miles from Porphyry lighthouse is Thunder Cape light. Off the shore to the eastward of Thunder Cape lie many islands and rocks. 45

Chart 2302, 2301.

Approaching from a distance, the most prominent features are the Sleeping Giant at Thunder Cape, some 1,200 feet (365^m8) high; the Paps, twin, cone-shaped hills north of Point Magnet over 500 feet (152^m4) high, which show up well as the surrounding country is comparatively low; and the high land east of Otter Cove.

Anchorage.—Generally speaking, the best shelter will be found in Otter Cove, which is easy of access; also north of Edward Island in the approach to Black Bay, the safest entrance to which is by Montreal Channel west of Porphyry light, to avoid the magnetic disturbance to the eastward.

Chart 2302.

Spar Island, about one mile in diameter and 320 feet (97^m5) high to tops of trees, lies three-quarters of a mile west by north from Lamb Island light. A cliff, deep-to, forms the northeast point. The remainder of the island is fringed with shallow water extending one cable off the southeast point. The narrow north-west point is only one cable south of a similar point on the main shore, and there is a narrow channel between, through which 19 feet (5^m8) of water may be carried.

A string of dry rocks, terminating in a rock 14 feet (4^m3) high, makes out from the main shore. This rock, lying 1 $\frac{3}{4}$ cables southwest from the northwest point of Spar Island, makes a sharp bend in the channel, which therefore, is only suitable for small craft.

Agate Point, the west side of which is a steep cliff, is joined to the main shore by a narrow neck, thus forming Agate Cove which is deep and quite open to the southward.

A small dry rock, 5 feet (1^m5) high, lies 1 $\frac{1}{4}$ cables east of the south extreme of Agate Point, having shoal water 1 $\frac{1}{4}$ cables to the south and east of it.

From Agate Point, the shore trends almost due north for 1 $\frac{1}{2}$ miles and is almost deep-to.

Roche Debout Point.—From the head of Agate Cove, the coast trends almost straight southwest for 2 miles to Roche Debout Point. This stretch of shore is fringed by a narrow shallow bank and boulders extending 1 $\frac{1}{2}$ cables south from the extreme of Roche Debout Point.

Hawk Island, 60 feet (18^m3) high, 200 yards (182^m9) in diameter and deep-to, lies east by south 1 $\frac{1}{4}$ miles from Roche Debout Point and the same distance south-southwest from Agate Point. With the exception of two banks, with 3 $\frac{3}{4}$ and 4 $\frac{1}{2}$ fathoms (6^m7 and 8^m2) over them, lying half a mile westward and northward, respectively, from Hawk Island, the water about the island is free from shoals.

Herron Point, bold, wooded and deep-to to the southwest and west, lies about one mile west from Roche Debout Point, the shore between being indented by a foul bay which makes in over half a mile inside the line of points. Herron Point is the east entrance point to a deep indentation in the coastline, formed into two arms, the western of which is called Shesheeb Bay and the eastern, Otter Cove. **Otter Cove** extends 3 miles in a northeasterly direction, and then turns sharply eastward in a narrow channel, with a depth of 11 feet (3^m4), the channel opens into a basin a quarter of a mile in diameter, where small craft may find shelter from all winds.

Chart 2302.

Otter Island, (Lat. $48^{\circ} 35' N.$, Long. $88^{\circ} 16' W.$), in the middle of the entrance of the cove of the same name, is half a mile long by 200 yards (182^m9) wide and deep-to. The cove may be entered on either side of the island, but from the southward, the eastern entrance is the better to avoid **Manuel Rock**, with 10 feet (3^m0) of water over it, which lies $3\frac{1}{2}$ cables west by north from the south end of Otter Island. 5

Clearing marks.—Hawk Island just visible south of Herron Point, bearing 097° , and two points at the southeast entrance of Marcil Bay in line, bearing 349° , clear this danger. 10

A bank, with a depth of 4 fathoms (7^m3) over it, lies three-quarters of a mile southwest of Herron Point.

Anchorage, in from 5 to 9 fathoms (9^m1 to 10^m5) of water over mud bottom, with good shelter, will be found towards the head of Otter Cove. The entrance points being bold and water deep, it is easy to make. 15

Marcil Bay is an unimportant bay one mile west of Otter Cove. It is a quarter of a mile wide at the mouth and extends in three-quarters of a mile in a northeasterly direction and is open to the southward.

Shesheeb Bay extends in a northerly direction 5 miles. The entrance is three-quarters of a mile wide, but the bay is not recommended as an anchorage as the water is deep; it is open to the southeastward and there are shoals in the entrance. 20

Shesheeb Point is steep-to to the south and eastward but shoal water extends half a mile northward. A shoal, with a depth of 11 feet (3^m4) over it, lies 2 cables off the northeast part of Shesheeb Point. 25

There is a deep water channel among the islands from Shesheeb Point to Point Magnet.

Charts 2302, 2301.

Lowrey Island, 34 feet (10^m4) high and 150 yards (137^m2) in diameter, lies 3 cables north-northeast from the north point of Brodeur Island, the steamer track passing between the two and nearer the latter, which is steep-to. Less than 6 feet (1^m8) of water will be found to the southward and eastward of the island. 30

Arthur Island, 20 feet (6^m1) high, 500 yards (457^m2) long and quite narrow, is deep-to, with the exception of the shallow spit making out from the north point northeasterly $1\frac{1}{2}$ cables to 8 feet (2^m4) of water. It lies half a mile south of Shesheeb Point, and about $2\frac{1}{2}$ cables northwestward from Coutlee Island, the steamer's track passing between them and favouring the former to avoid the shallow water off the latter. 35

Just west of Shesheeb Point and separated therefrom by a narrow, shallow bay, is a narrow point half a mile wide extending out $1\frac{1}{2}$ miles in a southerly direction. It is heavily wooded, being from 200 to 300 feet (61^m0 to 91^m4) in height. The west side of this point is deep-to and a snug little harbour is formed in conjunction with some islands abreast. 40

A small island, 28 feet (8^m5) high and separated from the south extreme of the above point by 150 yards (137^m2) of shoal water, is deep-to to the southward and of considerable importance, as the steamer track passes close by, this being 45

Chart 2302, 2301.

the narrowest part of the channel, which here makes a sharp bend. This island must be kept close aboard to avoid the shoal water to the north of Gordon Island, which lies one cable to the southward.

- 5 **Wharf.**—A small wharf, called Black's, is located at the extreme of the point to the west of the small island mentioned above.

Helen Island, (*Lat.* $48^{\circ} 33' N.$, *Long.* $88^{\circ} 20' W.$), a cable and a half west from the extreme of the point, is one mile long northeast and southwest by half that distance across. It is deep-to on all sides with the exception of a rock, with
10 less than 6 feet (1^m8) of water over it, lying half a cable off the north side. This island, in conjunction with Jobin and Davies Islands, to the northward, forms a snug harbour for small craft. There is a deep water channel between Helen and Jobin Islands, but Davies Island is joined to the head of the bay by shoal water.

From the head of the bay, the coast takes a general trend of southwest by
15 south for 4 miles to Root Point, and for the most part, after passing Davies Island, is free from shoals.

Sarah Island, about midway along this stretch of shore and $1\frac{1}{2}$ cables off the coast, is $3\frac{1}{2}$ cables long, 150 yards (137^m2) across and deep-to, but has a small dry rock 100 yards (91^m4) to the northeastward.

20 **Blaisdell Island**, the south point of which is half a mile east of Root Point, is three-quarters of a mile long by about a quarter of a mile across. It is deep-to to the eastward and fringed with shallow water for 75 yards (68^m6) to the north and west. A couple of small dry rocks extend $1\frac{3}{4}$ cables to the southwestward. The steamer track passes between Blaisdell Island and Root Point.

25 **Root Point**, lying $3\frac{1}{2}$ miles southwestward of Black's wharf point, is a narrow isthmus extending out one mile southwest by south, and forming the east side of a shallow and unimportant bay, to the westward of it.

Gourdeau Island lies with its northern and highest part of 125 feet (38^m1), half a mile south from Root Point, and 4 cables northwestward of Swede Island,
30 the steamer channel being between the islands. It is $1\frac{3}{4}$ miles long northeast and southwest by 650 yards (594^m3) across at the widest part near the north end. The island is deep-to, with the exception of the south extreme, off which shoal water makes out 100 yards (91^m4) and also the northeast part, where 8 feet (2^m4) will be found one cable off.

35 *Chart 2301.*

A shoal, with 20 feet (6^m1) least water over it and deep-to, lies 5 cables west from the south extreme of Gourdeau Island.

Girard Rock, with 7 feet (2^m1) least water over it, and dropping suddenly to deep water, lies west-southwest one mile from the northwest part of Gourdeau
40 Island.

Zeolite Point, lying northwest by west $1\frac{1}{2}$ miles from Root Point, is bounded by shallow water, small islands, and rocks. The shore from Root Point is much broken up and fronted by very shallow water, small islands and dry rocks extending off half a mile for the most part and should receive a wide berth.
45 Zeolite Point has a shallow bay of the same name to the eastward, and on the west side the shore trends north for $2\frac{1}{4}$ miles, forming the east side of **Sturgeon Bay**, shallow and useless.

Chart 2301.

Bourbonnais Island, in the mouth of Sturgeon Bay and with its north end half a mile west from Zeolite Point, is three-quarters of a mile long by a quarter that distance across. Shoal water makes out $3\frac{1}{2}$ cables south-southwest from the south point and $1\frac{1}{4}$ cables off the west side of the island. 5

Jean Pierre Point.—From the head of Sturgeon Bay, the shore trends almost straight south-southwestward for $4\frac{3}{4}$ miles to Jean Pierre Point. Very shoal water extends south-southwest 3 cables from the extreme of this point, and to the westward, a shallow bay of the same name makes in northerly three-quarters of a mile. 10

Hanbury Island, 25 feet (7^m6) high and $1\frac{1}{4}$ miles long by a quarter of a mile in width, is the northern of two islands, joined and surrounded by a shallow bank. The southern one, called **Stanton Island**, is 11 feet (3^m4) high, three-quarters of a mile long by a quarter of a mile wide. A shallow bank makes out eastward 3 cables from the northern end of this island, with 7 feet (2^m1) of water at its outer edge. The northern part of Hanbury Island is separated from the main shore, a mile above Jean Pierre Point, by a deep water passage 2 cables in width, and good anchorage may be had behind the island in 8 fathoms (14^m6) of water over clay bottom. Entrance may be made from either end, but care should be taken to avoid the shoal water, making $2\frac{1}{2}$ cables off the north end of Hanbury Island, by holding the main shore, which is deep-to, close aboard. 15 20

From the head of Jean Pierre Bay, the coast trends southerly for 4 miles to **Bruneau Point** (Lat. $48^\circ 28' N.$, Long. $88^\circ 29' W.$). For three quarters of the distance the shore is fronted by a shallow bank extending off 3 cables.

Hughes Island, 21 feet (6^m4) high and 150 yards (137^m2) in diameter, lies north-northeast three-quarters of a mile from Bruneau Point. Shoal water surrounds the island extending 2 cables to the north-northeast to 5 feet (1^m5) and less than 6 feet (1^m8) of water will be found, a little over 2 cables to the southwestward. 25

Barclay Islands, two in number, 50 and 40 feet (15^m2 and 12^m2) in height, lie almost in line east-southeast from Bruneau Point, the inner or larger island being only $1\frac{1}{2}$ cables off the point, and the eastern point of the outer island a little over a mile distant. The larger island is 600 yards (548^m6) in diameter and the smaller half that size. There is a deep water passage between the islands and Bruneau Point, but it is contracted to barely 150 yards (137^m2) in width by a spot, with 10 feet (3^m0) of water, lying off the northwest point of Barclay Island. Passing through, keep Bruneau Point close aboard. Deep water will be found between the islands, but shoal water including a small island makes out 2 cables to the eastward. 30 35

A spot, with 7 feet (2^m1) of water over it, lies east-southeast $2\frac{3}{4}$ cables off the southeast point of the outer Barclay Island, and only $2\frac{1}{2}$ cables northwestward from the steamer track, and great care should be taken when passing this point. 40

Clearing mark.—To pass $2\frac{1}{2}$ cables southeast of this danger, keep Tunnel and No. 10 Islands touching, bearing 230° . 45

The Paps, situated west-northwest 2 miles from Bruneau Point, and about 5 miles north-northeast from Point Magnet, are two cone-shaped summits about a quarter of a mile apart. They are the most conspicuous features on this section of the lake shore, as the land is quite low in the background. A higher summit of trees, 654 feet (199^m4) in height, is situated one mile to the west-northwestward but being flat does not show up to advantage from the lake. 50

Chart 2301.

From Bruneau Point, the shore makes to the westward for $1\frac{1}{2}$ miles, thence in a general south-southwest direction for $4\frac{1}{2}$ miles to Point Magnet. This last stretch of shore is very foul, being fronted by a shallow bank with islands and 5 reefs extending off about a mile.

Bennett Island, (*Lat.* $48^{\circ} 27' N.$, *Long.* $88^{\circ} 29' W.$), quite small, lies a little over a mile south from Bruneau Point. To the northwestward the island is clean, but in all other directions very shoal water makes out about $1\frac{1}{2}$ cables.

Kemp Shoal, with 10 feet (3^m0) least water over it, lies northwest by west 10 3 cables from Bennett Island.

Anchorage, with fair shelter, may be had inside Kemp Shoal, but care should be taken in entering to avoid the many dangers about.

Directions.—If approaching from the southwest, Shaganash light on No. 10 Island, astern, and the eastern Pap Summit, ahead, bearing 327° , will carry in 15 safely. The east tangents of Hughes Island and Bruneau Point in line, bearing 029° , passes $1\frac{1}{2}$ cables westward of Kemp Shoal. If from the northeastward, steer for western Pap Summit trees, bearing 305° , with the stern on Magee Rock. It would not be well to rely on compass bearings in this vicinity, owing to local disturbance of the magnetic needle.

Elson Rock, with less than 6 feet (1^m8) of water over its shoalest part and 20 100 yards (91^m4) in diameter, lies west-northwest 6 cables from Shaganash light.

Tunnel Island, 30 feet (9^m1) high, 250 yards (228^m6) long north and south by 150 yards (137^m2) across, lies east by north 2 miles from the extreme of Point Magnet. It is also three-quarters of a mile off the adjacent shore to the north- 25 westward, and near the outer edge of the shoals off this shore. The water deepens to 10 fathoms (18^m3) one cable to the southeastward.

This island, being abrupt at the southward, makes a good mark for picking up the inside channel, the track generally followed passing half a mile off.

A shoal spot, with 8 feet (2^m4) of water over it, lies east-northeast half a 30 mile from Tunnel Island and, as this spot is at the turning point of the channel, and only 2 cables northwestward of the ship track, great care should be exercised in passing.

Point Magnet, so called from the local disturbance of the magnetic needle in the vicinity, is low and difficult of discernment at any distance. It lies west- 35 southwest 4 miles from Shaganash light and about $6\frac{1}{2}$ miles northeast from Porphyry light.

Magnet Island lies south-southwest one cable from the point of the same name, to which it is joined by a very shallow bank, which surrounds the island, extending out 3 cables southeastward and the same distance to the south, 40 terminating in a small rock 11 feet (3^m4) high. Three and a half cables to the westward, less than 6 feet (1^m8) of water will be found, which drops suddenly to deep water. Magnet Island is about a mile long northeast and southwest by $3\frac{1}{2}$ cables across and very irregular in shape. A small boat channel exists between the point and island but is very foul.

45 A group of rocks, with less than 6 feet (1^m8) of water over them, lies $4\frac{1}{2}$ cables off the island with deep water directly outside them.

Chart 2301.

Sybil Island, 20 feet (6^m1) high and showing up well, lies 3 cables north-west from the southwest extreme of Magnet Island and half a cable inside the outer edge of the shallow bank. This island makes a good mark for the channel east of Edward Island. 5

Lennox Rock, with less than 6 feet (1^m8) of water over it, is the most outstanding danger off Point Magnet. It lies three-quarters of a mile south of Magnet Island and is deep-to on all sides.

Clearing mark.—To pass 2 cables southeast of this danger, bring Shaganash light open to the southeastward of Tunnel Island the width of the latter, bearing 047° . The magnetic compass is useless here. 10

A shoal, quite small, with 14 feet (4^m3) least water over it, lies $4\frac{1}{4}$ cables northwest from Lennox Rock.

Sloan Bank, with a spot about the middle of $4\frac{1}{2}$ fathoms (8^m2) over it, bearing east-southeast, distant $1\frac{1}{4}$ miles from the southwest point of Magnet Island, has an area under 10 fathoms (18^m3) of one mile in length by half that width. 15

Returning to Shesheeb Point, the islands and shoals to the southeast of the inside channel will now be taken up, extending from Brodeur Island south-westerly for about 14 miles to Shaganash Island. 20

Brodeur Island, the most northeasterly and about the largest of the islands off this section of the coast, is heavily wooded, rising to a height of 300 feet (91^m4) to the tops of the trees. It lies a little over half a mile southeast from the south part of Shesheeb Point. The island is $2\frac{1}{4}$ miles long north by east and south by west and, including Montgomery Island to the south, which is joined thereto by shallow water, makes a total length of $2\frac{3}{4}$ miles and a greatest width about the middle of seven-eighths of a mile. Deep water approaches close up to the abrupt shores of the island to the northeast, north, and west sides but about the middle of the east side, a group of rocks, with less than 6 feet (1^m8) of water over them, lies 350 yards (320^m0) off. Other rocks, with 8 to 14 feet (2^m4 to 4^m3) of water over them, lie off the east coast of these two islands. 25 30

Montgomery Island is about 2 cables in diameter and 60 feet (18^m3) high.

A shoal, of small area under 10 fathoms (18^m3), lies with its shoalest spot of $3\frac{3}{4}$ fathoms 5 cables southeast from the south point of Montgomery Island.

Coutlee Island, the north point of which is southwest by south three-quarters of a mile from the same part of Brodeur Island, and from which it is separated by a deep passage $1\frac{1}{4}$ cables wide, is the northern of a string of four islands stretching south-southwest $2\frac{1}{2}$ miles and being almost joined by shallow water. 35

Eight feet (2^m4) of water will be found one cable north-northeast of the north point of Coutlee Island, contracting the ship channel, in conjunction with Arthur Island to the northwestward, to $1\frac{1}{2}$ cables. 40

A rocky patch, with less than 6 feet (1^m8) of water over it, and 2 cables long north and south, lies three-quarters of a cable east of the south end of Coutlee Island. In passing through the channel between Brodeur and Coutlee Islands, hold well over towards the former which is deep-to. 45

Bachand Island, the southerly island of the above-mentioned string, is half a mile long by half that width and lies with its south end west-southwest three-quarters of a mile from the south part of Montgomery Island. A very

Chart 2301.

shoal bank extends off this part of the island, southeasterly $1\frac{1}{4}$ cables. A depth of 8 feet (2^m4) will be found one cable west from the northern part of Bachand Island.

- 5 **Lasher Island**, the northern part of which lies southwest by south $3\frac{1}{2}$ cables from Black's Wharf Point and $1\frac{1}{2}$ cables southeast from Helen Island, is 2 miles long northeast and southwest by half that distance across and sparsely wooded. It is the northeast island of a group extending in a southwest direction for some 6 miles. On the whole, the shores of the island are deep-to, with the exception
10 of the south side, which is joined to the adjacent islands by shallow water.

- Gordon Island**, lying $1\frac{3}{4}$ cables to the eastward of the northeast point of Lasher Island is $1\frac{1}{4}$ cables in length and half that width. Dry rocks extend half a cable north from the northeast point of the island forming, in conjunction with the small island to the north-northwestward, the narrowest part of the ship
15 channel, which is only one cable across. When passing here, the island opposite is generally kept close aboard.

Between Lasher Island and the Coutlee Island string, there is a deep passage 2 cables wide, and strangers approaching from the eastward are very apt to pass eastward of Gordon Island instead of to the north of it.

- 20 **Borden, Spain and Chapleau Islands**, all joined by a shallow bank, taken as a group, extend 2 miles north-northeast and south-southwest and are half that width.

- Deep water approaches close to the steep cliffs forming the north and west sides of Spain Island, the northwest island of the group. A bank, with an area
25 under 10 fathoms (18^m3) of half a mile north and south by half that width, lies with its shoalest spot of $3\frac{3}{4}$ fathoms (6^m8) seven-eighths of a mile east-northeast from the south extreme of Borden Island.

- Loon Harbour**, (*Lat.* $48^\circ 31' N.$, *Long.* $88^\circ 21' W.$), three-quarters of a mile long by half that width, is the area enclosed between Lasher Island on the north
30 and Spain and Borden Islands to the south, and in which perfect shelter may be found for moderate sized vessels from all winds. A small island and shoal spit from Borden Island divide it into two sections. Entrance may be made from the east or west, but the eastern entrance is very narrow, while the western entrance is 200 yards (182^m9) wide and deep-to.

- 35 **Rex Island**, 16 feet (4^m9) high and quite small, lies 2 cables west from the southwest point of Spain Island.

- Swede Island** is the northwestern island of a group of four islands forming the southwestern part of the Lasher Island Group terminating in Perley Island. Swede Island is $2\frac{1}{4}$ miles long north and south by half a mile across. Its north
40 point lies southeast $3\frac{1}{2}$ cables from the middle of Gourdeau Island, the ship track passing between them.

A shallow spit, with 8 feet (2^m4) of water at its outer end, makes out north-east by north 2 cables from the north point of Swede Island. The northwest shore of the island is deep-to; the west side has a bank making out half a cable.

- 45 **Boardman Rock**, 10 feet (3^m0) high, lies $1\frac{1}{4}$ cables south of Swede Island.

A dry rock, 16 feet (4^m9) high, lies 3 cables south of Boardman Rock. It is surrounded by shallow water for one cable and is the southwest extreme of the above group of islands.

Chart 2301.

Perley Island, the southern island of the group, is half a mile long northeast and southwest by half that distance across, and although deep-to, with the exception of the south part, is surrounded by detached shoals. It lies with its south and bold point bearing east-northeast, 5 miles from Shaganash light. A deep passage, a cable in width, separates it from Sweetland Island to the northward. 5

A spot, with 7 feet (2^m1) of water over it, lies 1½ cables east of the north point of Perley Island.

Paterson Rocks, a group of small dry rocks, lie 2 cables south from the south end of the same island. 10

Burpee Rock lies 3 cables west by south from the northwest point of Perley Island, with deep water between.

A deep channel, half a cable wide, exists between Swede and Cartwright Islands. 15

The group of islands just described is separated from that to the northeast by a deep passage 2 cables across; however, it is contracted to half that width by Rex Island in the middle of the north entrance.

Evelyn Rocks, three in number, extend in an east-northeasterly direction for 5 cables from the largest and highest of 30 feet (9^m1) which lies three-quarters of a mile east from the Swede, Perley Group just described. They are surrounded by shoal water and three sunken rocks will be found from 1½ to 4 cables south of the western rock. 20

Grenfell Rock, quite small, and with very shoal water extending 2 cables south, lies northwest by north 4 cables from the eastern Evelyn Rock. 25

Abreast Evelyn Rocks, off the northeast part of Sweetland Island, a dry rock with shoal water about it, lies 1½ cables offshore contracting the channel west of Evelyn Rocks to 3 cables. This channel is not recommended on account of the many shoals in the vicinity.

A spit, with 10 feet (3^m0) of water at its outer end, makes out 1½ cables north-eastward from the northeast extreme of Sweetland Island. 30

Macoun Island, 35 feet (10^m7) high and 4 cables long, is surrounded by shallow water, which terminates 3 cables to the southwestward of the island in a rock, one foot (0^m3) high. It lies with its north end bearing northeast by east 3¼ miles from Shaganash light and 2 miles west from Perley Island. 35

Blair Rock, (*Lat.* 48° 28' N., *Long.* 88° 25' W.), 7 feet (2^m1) high and quite small, lies north by east 3 cables from Macoun Island and very shoal water extends 2 cables southwestward. It is deep-to to the northward.

Clearing mark.—Tunnel Island touching Shaganash light on No. 10 Island bearing 230°, clears Blair Rock by one cable to the northwestward. 40

Coates Island, 25 feet (7^m6) high and quite small, lies between Macoun and Perley Islands and seven-eighths of a mile east of the former. Shoal water makes out 2½ cables to the south, terminating in 6 feet (1^m8) of water.

Schaffner Rock, with 8 feet (2^m4) of water over it, and very small, lies 3 cables north of Coates Island. 45

Irwin Rock, quite small, lies southwest by south 7½ cables from Perley Island.

Chart 2301.

Nest Island, 17 feet (5^m2) high and 2 cables long, lies south-southwest three-quarters of a mile from Macoun Island.

A shoal, with less than 6 feet (1^m8) of water over it, lies southwest 3 cables 5 from Nest Island.

Ayre Shoal, with less than 6 feet (1^m8) of water over it, is the most outstanding danger off this shore. It lies southwest $1\frac{3}{4}$ miles from Perley Island and $1\frac{1}{4}$ miles almost due east from the north end of Nest Island. The bank, under a depth of 18 feet (5^m5) extends, from the shoalest spot, one cable eastward 10 and $1\frac{1}{2}$ cables west-southwestward.

Clearing marks.—The east tangent of Perley Island in transit with Irwin Rock, bearing 039° , passes $1\frac{1}{2}$ cables southeast of Ayre Rock.

Gourdeau and Coates Islands touching, bearing 357° , clears the shoal one cable to the eastward.

15 The summit of east Pap Hill in transit with the north tangent of Nest Island, bearing 298° , clears the shoal 2 cables to the southwestward.

Shaganash Island, $1\frac{1}{2}$ miles long in a north-northeast and south-southwest direction by 600 yards (548^m6) across, is surrounded by small islands and reefs with the exception of the southeast part. Its southwest extreme is situated 30 3 $\frac{1}{2}$ miles east by north from Point Magnet, and the north extreme is south-southeast $1\frac{1}{4}$ miles from Bruneau Point. The northwest side is fringed with shoal water and small islands extending out 2 cables.

No. 10 Island, 20 feet (6^m1) high and quite small, with deep water approaching close to the western part of the island, lies $1\frac{3}{4}$ cables northwest from 25 the northwest side of Shaganash Island.

Light.—A *flashing white* light (*Lat. $48^\circ 26'$ N., Long. $88^\circ 29'$ W.*) is exhibited at an elevation of 36 feet (11^m0), from a white, square wooden tower surmounted by a red lantern, on the western side of No. 10 Island.

Magee Rock, quite small, lying northeast by east 5 cables from the north 30 extreme of Shaganash Island, is deep-to to the northward and marks the northeast extreme of the shoal water off Shaganash Island.

A small rock, 3 feet (0^m9) high, lies $3\frac{1}{2}$ cables off the east side of Shaganash Island, and a narrow reef makes out in a north-northeast direction for half a mile from this rock.

35 A deep channel, half a mile wide, exists between this reef and Nest Island Shoal.

Clearing mark.—Magee Rock held on any part of the larger or western Barclay Island will carry through in safety.

Tyrwhitt Island lying 3 cables southeast from the middle of Shaganash 40 Island and **St. Andrew Island**, 18 feet (5^m5) high and 4 cables to the south from the former, mark the limit of the dangers off Shaganash Island to the south-eastward, but must not be approached within half a mile.

Poynter Rock, quite small, marks the south extreme of the foul water off Shaganash Island. It lies $1\frac{1}{4}$ miles south of southwest extreme of Shaganash 45 Island, or 7 cables in the same direction from the southwest extreme of Cargill Island, just south of Shaganash Island.

Chart 2301.

Cargill Island, lying south-southeast from Shaganash Island, from which it is separated by a deep passage one cable wide, is three-quarters of a mile long northeast and southwest.

Harty Rock, with less than 6 feet (1^m8) of water over it, is the most westerly reef off Shaganash Island, lying 3 cables west-southwest from Cargill Island. It is quite small and has deep water about it. 5

Clearing mark.—The west tangent of the east Barclay Island in transit with Shaganash light, bearing 022°, passes 1½ cables west of this danger.

Directions from Lamb Island to Point Magnet via the inside channel. 10
—Having cleared Nipigon Strait and passing to the eastward of Lamb Island, Hawk Island slightly closed inside the north tangent of Brodeur Island, bearing 253°, will give Sovereign Rock a berth of 4 cables. Hold this course, passing one cable north of Hawk Island, for 7¼ miles until within a quarter of a mile of Brodeur Island. Round the north end of this island at a cable's distance and 15
steer for the middle of Gordon Island, with the same part of Lowrey Island astern. This will pass in mid-channel, three-quarters of a cable off Arthur Island, and the same distance off Coutlee Island Shoal. If desired, Arthur Island may be passed close to starboard. When a couple of cables off Gordon Island, or the east tangent of Shesheeb Point comes in transit with Arthur Island, 20
steer to hold the island on the starboard hand close aboard. When past this point, give Lasher Island a berth of about half a cable, and steer for the north end of Blaisdell Island, and Arthur Island touching the small island just passed. Hold this course until the channel between Gourdeau and Swede Islands opens 25
up, when a mid-channel course should be steered, heading 216°. Hold this course with Shaganash Island ahead, and the western part of Helen Island astern, for 7¼ miles, or until abreast Macoun Island, when change course to starboard to bring Tunnel Island touching Shaganash light on No. 10 Island, bearing 230°. Give Shaganash light a berth of about a cable and when abreast it, steer to bring 30
the small dry rock east of Barclay Islands touching Shaganash light. The compass being unreliable here no bearings are given.

Hold this range until Point Magnet appears south of Tunnel Island, or course may be changed to starboard as soon as Porphyry light appears, and steer for a point about a mile off the light and the northwest fall of Shaganash Island astern; if bound for Point Magnet Channel, head directly for Porphyry light and 35
with the middle of Shaganash Island astern, taking care to keep Shaganash light open to the eastward of Tunnel Island to avoid Lennox Rock. When Cowie Point opens westward of Magnet Island, steer for the middle of Edward Island about a west-northwest course or until Cowie Point touches the northeast point of Edward Island. Carry this range in past Point Magnet, clearing the shoals off 40
the point by a couple of cables.

Charts 2313, 2301.

BLACK BAY AND APPROACHES.—The approach to Black Bay, lying between Point Magnet and Sand Islands, is divided into three channels by islands, rocks, and shoals. **Point Magnet Channel**, lying between Point 45
Magnet and Edward Island, should not be attempted by strangers. **Montreal Channel** lies between Edward Island and a group of islands consisting of Cranberry, Gravel, and Clark Islands. This channel is the safest, being wide and easy of approach, with Porphyry Island light as a guide. **Middle Channel** lies between the above group and Sand Islands. 50

Charts 2313, 2301.

The entrance to Black Bay proper is about 10 miles north of Porphyry light, between George Point and Kidd Point. From the entrance, the bay extends in a general northeast by north direction for about 27 miles, having a
 5 greatest width towards the upper end of $10\frac{3}{4}$ miles. The shores are fronted by a shallow bank, which extends off a considerable distance towards the head, but there is a deep water passage up the middle, varying in width from $1\frac{3}{4}$ miles at the entrance to $2\frac{3}{4}$ miles, and extending about two-thirds of the distance up the bay. Beyond this, small islands and shoals block the passage. For the first 15 miles,
 10 the east shore consists of steep banks from 150 to 200 feet (45^m7 to 61^m0) in height, but beyond this, the land is low and marshy, and continues pretty much the same about the remainder of the bay. The Canadian National and Canadian Pacific Railways pass close by the northwest corner of the bay.

From Point Magnet, the coast takes a general north-northwest direction for
 15 5 miles to George Point. For the first 3 miles, or to **Cowie Point**, the coastline is irregular and shoal water makes out to the line of Point Magnet and Cowie Point.

Seagram Rock, with less than 6 feet (1^m8) of water over it, lies $1\frac{1}{4}$ miles north-northwest of Point Magnet. A rock, with 17 feet (5^m2) of water over it,
 20 lies $1\frac{1}{2}$ cables west of Seagram Rock.

Cowie Point is steep-to on the west side, but a rock, with less than 6 feet (1^m8) of water over it, lies half a mile south-southwest from the point, and another rock, with 17 feet (5^m2) of water over it, lies $2\frac{1}{2}$ cables north of the above rock.

Miles Bay, east of George Point and free from shoals, affords a comfortable
 25 anchorage for northerly weather, in $3\frac{1}{2}$ fathoms (6^m4) over mud bottom.

George Point lies 5 miles north-northwest of Point Magnet. A depth of 13 feet (4^m0) will be found 3 cables southwest of the point, but a cable beyond this, the water is deep. This point should receive a berth of half a mile.

Copper Point.—From George Point (*Lat. $48^\circ 29' N.$, Long. $88^\circ 36' W.$*),
 30 the coast trends north-northeast for 5 miles to Copper Point and is fringed with shallow water for an average width of 5 cables.

Louise Bay, immediately east of Copper Point, is a small cove where timber is assembled preparatory to shipping. A depth of 13 feet (4^m0) may be carried in, but the entrance channel is narrowed by a 9-foot (2^m7) spot, lying $2\frac{1}{4}$
 35 cables northeastward from the extreme of Copper Point.

Chart 2313.

From the head of Louise Bay, the coast takes a northeasterly direction for 13 miles, thence north-northeast for 6 miles, where it swings to the westward and takes a general northwest direction for $2\frac{1}{2}$ miles to Mary Ellen Point. Along
 40 the first stretch of the above for 11 miles, steep banks, from 150 to 200 feet (45^m7 to 61^m0) high, form the shore, but beyond this for $1\frac{1}{2}$ miles it is low, sand beach with swampy land behind, which extends across to the head of Shesheeb Bay, a distance of about a mile. Between this narrow neck and Mary Ellen Point, the land is low and densely wooded.

45 About the north extreme of the above ridge, and midway between Black and Shesheeb Bays, a prominent hill rises to a height of 446 feet (135^m9) and is the most conspicuous feature on the east side of the bay.

Chart 2313.

A rocky ridge, quite narrow, and with from 9 to 10 feet (2^m7 to 3^m0) of water over it, parallels the shore about three-quarters of a mile off and extends for a distance of 3 miles from a point $2\frac{1}{2}$ miles northeast from Copper Point. A couple of cables off the ridge, the water is deep. The shore in this vicinity should receive a berth of $1\frac{1}{2}$ miles; do not get inside the line Finlay Point touching Copper Point. 5

Foxhound Rock, with less than 6 feet (1^m8) of water over it, consists of a pile of boulders, about a cable north and south, and quite narrow, and is the most dangerous and outstanding shoal in Black Bay. It lies southwest by south $2\frac{1}{2}$ miles from Scimming Island and $3\frac{3}{4}$ miles off the east shore of the bay. The shorebank, under 18 feet (5^m5) of water, almost meets the bank extending about 3 cables to the north of Foxhound Rock. 10

Clearing marks.—Mary Ellen Point touching Scimming Island, bearing 035° , passes three-quarters of a cable to the northwest of Foxhound Rock; a conspicuous clump of dark trees on the west shore, about 2 miles north of Enterprise Bay, open to the north of Granite Island the width of the latter, bearing 277° , clears this danger by 2 cables to the southward. 15

Mary Ellen Point, low, about 500 yards (457^m2) across and square-shaped, is the only point in the northeast part of Black Bay. The shorebank, under 18 feet (5^m5) of water, extends almost to Foxhound Rock. 20

Scimming Island, 55 feet (16^m3) high and $6\frac{1}{2}$ cables long north and south by 200 yards (182^m9) across, and surrounded by shoal water, lies southwest distant $1\frac{1}{2}$ miles from the nearest part of Mary Ellen Point.

Delaney Island, 65 feet (19^m8) high and 4 cables long north and south by half that width, is situated northwest about 2 miles from Mary Ellen Point and $1\frac{1}{2}$ miles off the main shore abreast, to which it is joined by shoal water. 25

From Mary Ellen Point, the shore trends to the north-northeast for $1\frac{1}{2}$ miles, then gradually trends to the west-northwest to the entrance to **Black Sturgeon River**, forming a rounding shallow bay with low, densely wooded shores. Black Sturgeon River enters Black Bay about the middle of the north shore, at a point $4\frac{1}{2}$ miles northwest of Mary Ellen Point. The majority of the pulpwood and timber shipped from Black Bay is brought down by this river, rafted at the mouth and generally towed by small tugs to Enterprise Bay, where it is loaded into barges for shipment. 30 35

Hurkett Cove.—From Black Sturgeon River, the coast takes a general northwest by west direction for a couple of miles, thence west-southwest for about the same distance to Hurkett Cove forming an open, shallow bay. Hurkett Cove is small and unimportant, having very little water in it. The main lines of the Canadian National and Canadian Pacific Railways pass close by this cove. Hurkett, a flag station on the Canadian Pacific Railway is $1\frac{1}{2}$ miles northeast from the head of the cove. There is a Government wharf, 420 feet (128^m0) long, extending to a depth of 7 feet (2^m1). 40

Dorion Landing.—From Hurkett Cove, the coast runs south for $1\frac{1}{2}$ miles to Wolf River, thence southwest 3 miles to Dorion Landing. This stretch of coast is low and fronted by the usual shallow water. About half a mile north of the landing, the land rises to a height of 120 feet (36^m6) in a small conspicuous hill, near the shoreline. A trail connects with Dorion, a post office and flag station on the Canadian Pacific Railway, about a mile to the northwestward. 45

Chart 2313.

Enterprise Bay is a slight indentation in the face of a headland, about the middle of the west side of Black Bay. Just north of the bay, the land rises to a height of 250 feet (76^m2) and, the surrounding country being low, forms the most prominent feature on the west side.

Granite Island, 115 feet (35^m1) high and 400 yards (365^m8) long by half that width, lies east by north 3 miles from Enterprise Bay summit. A bank, with 18 feet (5^m5) of water, or less, makes out northeasterly for 1½ miles and is practically joined to the east shorebank by little more than 18 feet (5^m5) of water.

A small rock, 8 feet (2^m4) high, lies 2 cables east of Granite Island and another small rock, 9 feet (2^m7), lies 1½ cables further in the same direction. These rocks lie near the southeast extreme of the shallow bank making out northeast from Granite Island.

Green Island, about 600 yards (548^m6) in diameter and 67 feet (20^m4) high, lies southeast three-quarters of a mile from Enterprise Bay Point, the southeasterly extreme of the headland. It is surrounded by shoal water, but 18 feet (5^m5) of water will be found half a mile northeasterly and easterly.

McEachan Island, just separated from the south part of Enterprise Bay Point by three-quarters of a cable of shallow water, is 52 feet (15^m8) high and forms fair shelter for small craft.

Enterprise Bay may be called the head of navigation in Black Bay. A depth of 19 feet (5^m8) may be carried through west of Granite Island but with the exception of small tugs, steamers seldom proceed further north.

The majority of barges loading pulpwood in Black Bay come to off this bay.

From Enterprise Bay Point, the shore trends west-southwest for 1¼ miles thence curves to a southerly direction for 5 miles to Bent Island. This stretch of shore is fronted by very shallow water, the 18-foot (5^m5) line being about on the line, a couple of cables off Bent Island to 4 cables off Green Island.

Nuttal Island, 2½ miles south by west from Enterprise Bay Point, is joined to the shore by a boulder and gravel bar, awash, extending in a west by south direction 1¼ miles.

Bent Island (Lat. 48° 37' N., Long. 88° 32' W.), is the extreme of a gravel and boulder bar awash, extending to the shore in a northwest by north direction three-quarters of a mile. The 18-foot (5^m5) bank extends 1½ cables east of the island. Entering the bay, this point should receive a berth of one mile. From the nearest point of the shore inside Bent Island, the coast trends in a general west by south direction for 3 miles to Pearl River.

Pearl River, fronted by the usual shallow bank, which extends off 2 miles to 18 feet (5^m5) of water, is used for bringing down timber and pulpwood. There are cribs at the mouth for collecting the timber and forming rafts.

Charts 2313, 2301.

From Pearl River, the coast of the bay takes a general southerly trend for 7½ miles thence southwest for 2 miles to Kidd Point, the southwest entrance point to Black Bay. Along this stretch, the land in the rear is low and densely wooded. From a point 3 miles south of Pearl River to Squaw Island, the 18-foot (5^m5) bank extends off from one to 3 cables, and it may be approached to within three-quarters of a mile with perfect safety.

Charts 2313, 2301.

Squaw Island, lying northwest $2\frac{1}{2}$ miles from George Point and only 2 cables off the west shore, to which it is joined by shoal water, is $3\frac{3}{4}$ cables west from the deep water.

Kidd Point, west by north distant 3 miles from George Point, as before 5 stated, may be called the southwest entrance point to Black Bay, and is also the northeast entrance point to **Squaw Bay**, a shallow and unimportant bay, about a mile across at the mouth, and making in the same distance. Good anchorage, with shelter from westerly winds, may be had off the entrance to the 10 bay.

From the south entrance point to Squaw Bay, the shore takes a general south-southwest direction for $8\frac{3}{4}$ miles to Finlay Point. For the most part, this stretch of shore is fronted by a fringe of shallow water extending 2 cables off. The land behind rises to a ridge paralleling the shoreline.

Islands and dangers in the approach to Black Bay.—

15

Porphyry Island, the most southerly of a group of islands in the approach to Black Bay, is almost 2 miles long northeast and southwest by 600 yards (548^m6) across and wooded. The island is surrounded by a shoal bank, by which it is joined to Edward Island, the largest island of the group and next to the north- 20 ward.

Light.—Fog signal.—An *occulting* light, every 6 seconds, is exhibited, at an elevation of 56 feet (17^m1), from a white, square wooden tower with red lantern, on Point Porphyry at the southwestern extremity of Porphyry Island. From the eastward, the light is obscured northward of 233° and for an arc of 2° over Dreadnaught Island. 25

A fog diaphone sounds *one blast* every 60 seconds.

Porphyry Reef, with less than 6 feet (1^m8) of water on it, extends $3\frac{1}{2}$ cables in an east-northeast and west-southwest direction and lies 2 cables southeast of Point Porphyry light. One cable south of the reef, 20 fathoms (36^m6) of water will be found. A spit makes out from the lighthouse point one cable in a south- 30 west direction, with less than 6 feet (1^m8) of water near its extreme.

The west shore of the island, just north of the light, is fronted by very shoal water making out $1\frac{1}{2}$ cables.

Dreadnaught Island, 36 feet (11^m0) high, and 200 yards (182^m9) long by half that width and heavily wooded, lies east by north seven-eighths of a mile from 35 Point Porphyry light. The island is deep-to, with the exception of the west end, from which a shoal bank makes out, almost joining a bank making out 3 cables southeast from Porphyry Island.

Monk Island, (*Lat.* $48^\circ 22' N.$, *Long.* $88^\circ 37' W.$), 20 feet (6^m1) high, 400 yards (365^m8) long and half that width, lies northeast by east half a mile 40 from the northeast extreme of Porphyry Island. The island is surrounded by a shallow bank, which makes off from Porphyry Island, and extends 3 cables south of Monk Island.

A small rock, with a bank, having less than 6 feet (1^m8) of water over it, extending 2 cables southeast, lies northeast 3 cables from the north extreme of 45 Monk Island.

Chart 2313, 2301.

Small islands and foul water extend $3\frac{1}{2}$ cables off the middle of the south-east side of Edward Island, about three-quarters of a mile northeast from Monk Island, and a spot, with 14 feet (4^m3) least water, lies $1\frac{1}{2}$ cables beyond this bank and northeast a little over three-quarters of a mile from Monk Island. This shoal is only one cable west of the range entering Point Magnet Channel.

Hardscrabble Island, 50 feet (15^m2) high, 4 cables long east and west by three-quarters of a cable in width, with shoal water extending one cable west and half a cable to the eastward, lies with its west end bearing northwest and distant seven-eighths of a mile from Point Porphyry light.

Little Gibraltar Rock, conspicuous and 16 feet (4^m9) high, lies 50 yards (45^m7) south of the northwest entrance point of Edward Harbour. It is steep-to to the south, but shoal water makes off half a cable to the southwestward.

Edward Island, as already stated, is separated from Porphyry Island by shallow water. The south point of the island is a little over a mile north of Point Porphyry light. It is quite high and wooded, and the largest island of the group in the approach to Black Bay, being $5\frac{1}{2}$ miles long by $2\frac{1}{2}$ miles in greatest width. The west side, which trends in a general northerly direction from the southwest point, is indented by two deep bays, quite open to the south-westward. This shore of the island has no outstanding shoals, the shoal water extending off the points from one-half to one cable. The north shore is fronted by a shoal bank, extending out about three-quarters of a mile at **Ariel Island**, which is just separated from the north part of the island. The shorebank, with half a cable off the north point of Ariel Island and in conjunction with the shoal making out from Grey Island to the northwestward, contracts the channel between the islands to one cable in width. The northeast part of Edward Island, which projects in a north-northeast direction three-quarters of a mile from the island proper, with a width of 200 yards (182^m9), is almost deep-to off the extreme of the point. Shoal water, to a depth of 14 feet (4^m3), extends $1\frac{1}{2}$ cables to the eastward, and the bay formed to the westward of the point is foul.

Anchorage.—A good berth, with perfect shelter from southerly winds, will be found about 2 cables east of Ariel Island, in 19 feet (5^m8) of water over clay bottom.

Grey Island, lying about a mile northwestward from Edward Island, is $1\frac{1}{2}$ miles long northeast and southwest by half a mile across. It is surrounded by a shallow bank, which includes **Arno Island**, one cable to the northward. Shoal water, to a depth of 11 feet (3^m4), extends 2 cables north-northeast from the north point of Arno Island and between Arno and Grey Islands, the bank makes out 4 cables to the westward to a depth of 11 feet (3^m4). To the southwest from Grey Island, very shoal water extends southwesterly for $1\frac{1}{2}$ cables. To the eastward of Grey Island, the bank to a depth of 17 feet (5^m2), makes out southeasterly 5 cables and, as before stated, leaves a passage only one cable in width.

Directions for Point Magnet Channel.—Cowie Point touching the north-east extreme of Edward Island clears the shoals off the east side of Edward Island by one cable, and passes 2 cables to the westward of the shoals off Magnet Island. No compass bearing is given, owing to the unreliability of the magnetic needle in this district. Hold this course, until abreast Sybil Island, when swing to starboard three-quarters of a point, giving the northeast point of Edward Island a clearance of 2 cables and heading on the west fall of a high summit

Charts 2313, 2301.

of trees. Round the sharp northeast point of Edward Island at a cable's distance, to avoid the shoal water making off the main shore abreast, and steer a little inside the north extreme of Ariel Island, and come to anchor in any convenient depth about $2\frac{1}{2}$ cables off the latter.

5

If bound for Black Bay, when abreast the north point of Edward Island, steer 339° , heading about three-quarters of a mile off George Point. Care should be taken to keep the southwest point of Magnet Island well closed in behind Edward Island, to avoid the shoal water off George Point, the extreme of which is on the tangent Magnet and Edward Islands touching.

10

Caution.—This channel must not be attempted in thick weather, or at any time that the ranges are not discernible, owing to local disturbance of the magnetic needle.

Clark Island, (*Lat.* $48^\circ 20' N.$, *Long.* $88^\circ 43' W.$), the southern island of the group lying between Montreal and Middlebrun Channels, lies $3\frac{1}{2}$ miles west of Point Porphyry light. Including the small rocks off the northeast end, it is 2 cables long and deep-to off the dries.

15

Carney Rock, 13 feet (4^m0) high, lies $3\frac{1}{2}$ cables east of Clark Island or 3 miles west from Point Porphyry light. Two small dries extend one cable to the eastward from shoal water, and small dries lie $2\frac{1}{2}$ cables northeastward.

20

Gravel Island, quite small, lies one mile northeast from Clark Island. It is surrounded by an extensive, shallow bank, extending 3 cables to the south-southwest, with a rock, one foot (0^m3) high, eastward a couple of cables, with less than 6 feet (1^m8) of water, and northeast by north 7 cables, with 7 feet (2^m1) least water, almost joining the bank from Cranberry Island next north.

25

Cranberry Island, 16 feet (4^m9) high, 250 yards (228^m6) long by 60 yards (54^m9) across, lies one mile north-northeast from Gravel Island. The island is surrounded by shoal water, which extends $1\frac{1}{2}$ cables to the north, and $2\frac{1}{2}$ cables to the south-southwest, overlapping, but not touching the bank from Gravel Island.

Copp Rock, with 16 feet (4^m9) of water over it, lies a quarter of a mile north-westward of Cranberry Island.

30

Caution.—The line, Arno and Grey Islands touching, passes over this danger and masters are warned to keep the gap between the islands well open in passing Copp Rock.

Montreal Channel, lying between Edward Island and the group of islands and shoals just described, has a least width of $1\frac{3}{4}$ miles and is quite free from shoals. Entering, a mid-channel course may be taken. In thick weather, favour the Edward Island side as the land shows up much better than the low islands to the westward.

35

Finlay Point.—Returning to the main shore, this point is situated 4 miles, 285° , from Point Porphyry light and has shoal water extending three-quarters of a cable to the eastward.

40

Finlay Bay is quite small with a depth of 17 feet (5^m2) in the middle, but not more than 10 feet (3^m0) can be carried in on account of the bar at the entrance.

Middlebrun Bay, to the southwest of Finlay Bay, is shallow and unimportant.

45

Chart 2301.

Middlebrun Island, lying about a cable off the eastern point of the bay of the same name, is 34 feet (10^m4) high and 250 yards (228^m6) long by half that width. The water is deep 100 yards (91^m4) off the island to the eastward and 5 southeastward, but is joined to the main shore by shoal water.

Sand Islands consist of a group of three, the largest of which lies $3\frac{1}{2}$ cables southeast from the main shore, just west of Middlebrun Bay. This island is $1\frac{1}{2}$ cables long northeast and southwest by half that width, and is surrounded by a shallow bank which includes the other smaller islands forming the group. One, 10 bearing east-northeast one cable, is deep-to to the southeastward. The other small island, 11 feet (3^m4) high, bears west-southwest 2 cables from the largest island. From this island, shoal water makes out northwestward $1\frac{1}{2}$ cables, and 3 cables southwestward a spot, one foot (0^m3) high, will be found, dropping off suddenly to deep water.

15 A spot, with 17 feet (5^m2) least water, lies north-northeast distant 3 cables from the largest Sand Island. To clear this spot, keep the extreme of Thunder Cape touching the main shore nearby until abreast the northeastern Sand Island.

Middlebrun Channel is clear of shoals, with the exception of Copp Rock and a small spot, with 19 feet (5^m8) of water over it, lying nearly three-quarters 20 of a mile westward of the north point of Cranberry Island, or $3\frac{1}{2}$ cables west of Copp Rock. The ship track passes between these two dangers.

Direction for Middlebrun Channel.—Approaching from the westward, give Sand Islands a berth of 3 cables and steer 040° for the gap between Arno and Grey Islands. Make sure that this gap is well open passing Copp Rock, as the 25 Islands touching will pass over this danger. Vessels of heavy draught should, when east of the north side of Finlay Point, haul to northward and steer 012° , with Foster Point ahead, for a distance of three-quarters of a mile, or until the north side of Cranberry Island bears 099° , to avoid the 19-foot (5^m8) spot lying $3\frac{1}{2}$ cables west of Copp Rock. When abreast Copp Rock, course may be shaped to 30 pass 2 cables off the northwest part of Edward Island or keep the western Pap Hill about the middle of the gap between Grey and Edward Islands, bearing 050° . Hold this course until Clark Island touches Edward Island, when steer to pass three-quarters of a cable off Ariel Island and come to anchor as before stated.

If bound for Black Bay, course may be changed abreast Finlay Point for 35 the middle of the entrance to the bay and steer 029° .

Sand Islands to Thunder Cape.—Deep water approaches close up to the main shore abreast Sand Island, and from this point the coast takes a general west by south direction for about 8 miles to Thunder Cape. This stretch of 40 shore is indented by wide open bays fringed by shallow water and outstanding islands and shoals.

Silver Islet Landing, on the main shore situated 8 miles west from Point Porphyry light, with 10 feet (3^m0) of water at the wharf, affords good shelter from all winds. From the wharf, the shore trends to the northeastward forming a sand and gravel bay fronted by a narrow fringe of shoal water. Several buildings 45 will be seen along this shore, consisting of a church about 5 cables northeast from the wharf, a stamp mill and several small buildings built in connection with Silver Islet mine, now abandoned. From the wharf, the coast trends 450 yards (411^m5) west-southwest to a sharp point on which another church stands; thence in a northerly and northwesterly direction forms a wide open bay fronted by shoal 50 water for one cable off. From Church Point, shoal water extends in a southwest direction $1\frac{1}{2}$ cables.

Chart 2301.

Burnt Island, 40 feet (12^m2) high and $3\frac{1}{2}$ cables long northeast and southwest by 150 yards (137^m2) across, lies southeast 100 yards (91^m4) from Silver Islet wharf and forms the protection to the landing. Extra protection is provided by a shallow spit making out in an east-northeast direction from Burnt Island for $3\frac{1}{4}$ cables, terminating in two small rocks which are deep-to to the northeast and southeast. 5

Crosse Rocks, (*Lat. $48^{\circ} 20'$ N., Long. $88^{\circ} 48'$ W.*), the largest 19 feet (5^m8) high, are included in the above shallow spit, half-way between the outer rocks and the island. 10

A shoal, small and detached, with 5 feet (1^m3) of water over it, lies southwest $1\frac{1}{2}$ cables from the southwest end of Burnt Island.

Day marks.—On Silver Islet Landing wharf are erected two masts. The front mast is placed near the southwest end of the wharf, and the rear one bears 053° , distant 116 feet (35^m4) from it. These masts in line lead in between the shoals off Church Point and that lying off Burnt Island. 15

Vessels may also approach the wharf from the eastward, by giving the most northeasterly of the Crosse Rocks a berth of about one cable, and keeping the rock (18 feet (5^m5) high) close aboard and then steering for the wharf.

Silver Islet, 11 feet (3^m4) high and 200 yards (182^m9) long and half that width, lying southeast by south half a mile from Burnt Island and 2 miles west-southwest from the largest Sand Island, is the site of Silver Islet mine. The old mine shaft building is still standing though abandoned some years ago. Shoal water makes out from the island 50 yards (45^m7) to the westward, and a dry rock lies east-northeast $1\frac{3}{4}$ cables, from which shoal water extends one cable farther in the same direction. A group of small rocks lies half-way between the above outer rock and the island. The track usually followed by steamers bound for Black Bay passes $1\frac{1}{4}$ cables northwest of the island and, for those bound to the eastward, passes 2 cables to the southward. 20 25

Maloney Shoal, with 14 feet (4^m3) least water, and 19 feet (5^m8) of water $1\frac{1}{2}$ cables southwest by south from it, lies one mile east of Silver Islet, about in the middle of the passage between the shoals off Sand and Silver Islands. 30

Clearing mark.—The south fall of Thunder Cape in line with the south side of Silver Islet, bearing 268° , clears Maloney Shoal to the southward.

Trowbridge Island, 93 feet (28^m3) high, and $1\frac{3}{4}$ cables long by half a cable across, is the southwestern of a detached string of islands and shoals, extending from Sand Islands southwestward for $5\frac{3}{4}$ miles. It lies about 3 miles southeastward of Thunder Cape light. Shoal water makes out from this island half a cable, with the exception of the south side, which has deep water close up. 35 40

Light.—**Fog signal.**—A *flashing white* light, showing *one flash* every 5 seconds, is exhibited at an elevation 114 feet (34^m7), from a white, octagonal, concrete tower, 39 feet (11^m9) high, on the summit of Trowbridge Island. 45

A fog diaphone sounds 2 blasts every 60 seconds.

Marvin Island, 38 feet (11^m6) high and 300 yards (274^m3) long by 50 yards (45^m7) in width, lies east-northeast 4 cables from Trowbridge Island; half-way between the two is a spot, with a depth of 5 feet (1^m5) of water over it. Marvin Island is deep-to, with the exception of the northeast point, from which very 45

Chart 2301.

shoal water extends east-northeast 3 cables and a detached spot, with 16 feet (4^m9) of water over it, will be found at 4 cables in the same direction. **Majestic Rock** is situated in this shoal.

- 5 **Shangoina Island**, 107 feet (32^m6) high and 1½ miles long northeast and southwest, including a couple of detached rocks off the northeast extreme, by 200 yards (182^m9) in width, has deep water about it. It lies about 1¼ miles south of Burnt Island.

10 In making Silver Islet Landing, the northeast point of the island may be approached quite close with perfect safety.

Ship Island, (*Lat.* 48° 18' N., *Long.* 88° 51' W.), 11 feet (3^m4) high and quite small, lies 3½ cables west from Shangoina Island. From the island, very shoal water extends 1½ cables to the southwestward and a small rock 4 feet (1^m2) high, lies one cable to the northeastward.

- 15 **Pyritic Island**, 35 feet (10^m7) high and 200 yards (182^m9) long, lies 2½ cables northwestward from the middle of Shangoina Island. Shoal water surrounds the island extending east-northeast 2½ cables and southwest one cable.

20 From Church Point, Silver Islet Landing, the main shore trends northwesterly for a little over half a mile, thence southwesterly for 1¼ miles forming a wide, open, deep bay, thence taking a west-southwest direction for 1¾ miles to Tee Harbour. This last stretch of shore is fronted by shoals and rocks extending off about 1½ cables at the middle.

- 25 **Tee Harbour** is a small, unimportant cove, quite open, apparently so called from the shape of the point which forms the harbour. From the narrow neck at the head of the harbour, the point extends east-northeast for 2 cables, off which the water is shoal for 100 yards (91^m4). The point also makes to the west-southwest for 3½ cables and a small rock, 7 feet (2^m1) high, lies off the point 150 yards (137^m2) in the same direction. Between Tee Harbour and Thunder Cape, the coast forms a wide, open, deep bay making in one mile inside the line of the
- 30 points.

In thick weather or at night, it would be well to keep outside the islands off Thunder Cape.

CHAPTER XVI

THUNDER CAPE TO PIGEON RIVER, AND ISLE ROYALE

Datum.—See page 1.

Chart 2301.

THUNDER BAY, in the northwest part of Lake Superior, is a fine stretch of water, with a depth of over 40 fathoms (73^m2) in the middle, and comparatively few islands and shoals therein. It is 34 miles long northeast and southwest from inside Flatland Island to the head of the bay, and 15 miles in greatest width, tapering at both ends. The entrance is between Thunder Cape to the eastward and Flatland Island, 15 miles to the west-southwestward, and is divided into two passages by Pie Island. The passage to the northeastward, $5\frac{1}{2}$ miles wide, is the main entrance to the bay. The shores of the bay are for the most part bold, rising in places to heights of from 500 to 1,200 feet (152^m4 to 365^m8). On the west shore are situated the cities of Fort William and Port Arthur. From the southwest entrance to Pigeon River, some 20 miles to the southwestward, the coast is broken up by many bays and has the same bold aspect. From Little Trout Bay, about the middle of the above stretch, a string of islands and shoals extends in a northeasterly direction to abreast and south of Pie Island, and inside which there exists an excellent and well protected ship channel into Thunder Bay, by the southwest entrance between Flatland Island and Pie Island.

Danger area.—A practice firing danger area is situated in Thunder Bay covering an area of approximately 8 miles by 3 miles. See chart 2301 for limits of area.

Thunder Cape, the east entrance point to the bay, is a very prominent headland, near the southwest extreme of a long point of land projecting in a southwest by south direction for some 20 miles, with an average width of 6 miles, and forms the dividing line between Black and Thunder Bays. The extreme of the cape is quite low, but from a short distance back rises gradually for about a mile, where it becomes much more abrupt and at a mile and a half from the point it reaches an elevation of 1,046 feet (318^m8). A main triangulation station of the Canadian Hydrographic Service is established here, and a few feet to the eastward of the station, the hillside is an almost perpendicular cliff, about 600 feet (182^m9) high.

This is also the southwestern extreme of what is known as the "Sleeping Giant", which extends in a north-northeast direction for 3 miles, with an average width of one-third of a mile, reaching its highest altitude of 1,200 feet (365^m8) near the north limit. To the northward, this promontory slopes down to Sawyer Bay.

Light.—A *white flashing* light (Lat $48^{\circ} 18' N.$, Long. $88^{\circ} 56' W.$) is shown, at an elevation of 35 feet (10^m7), from a steel tower, on the west side of Thunder Cape.

Hare Island, 20 feet (6^m1) high, $1\frac{3}{4}$ cables long and very narrow, lies northwest $1\frac{3}{4}$ miles from Thunder Cape light. The island is surrounded by a shallow bank, which extends 4 cables to the south-southwestward, and a spot, with 23 feet (7^m0) of water over it, lies southwest by south $1\frac{1}{4}$ miles from Hare Island, or 2 miles west of Thunder Cape light.

Chart 2301.

Light-and-bell-buoy.—A light-and-bell-buoy, painted red, and showing a *flashing red* light, is moored about one cable south of the above 23-foot (7^m0) spot. The buoy is fitted with a radar reflector.

- 5 **Clearing mark.**—The west extreme of Trowbridge Island in line with Thunder Cape, bearing 104°, passes over Hare Island Bank, in 7 fathoms (12^m8) of water, about half a mile south of the very shoal water and one-quarter of a mile north of the 23-foot (7^m0) spot.

- 10 From Thunder Cape, the whole easterly shore of Thunder Bay takes a general north-northeast trend for 20 miles to the head of the bay. This stretch of shore is bold and clean and can be approached to within a quarter of a mile.

- Sawyer Bay**, situated just northeast of the "Sleeping Giant", lies 5 miles north-northeast from Thunder Cape, the shore between being fringed with shallow water, half a cable wide. It is three-quarters of a mile across the mouth and makes in the same distance. The bay is quite open to the northwestward, but affords protection from the south and east, with good anchorage in 6 fathoms (11^m0) over clay bottom. The head of the bay is low, with a shallow bank 1½ cables wide. From Sawyer Bay, the coast trends northeast by north for about 2 miles quite unbroken to Hoorigan Bay, which is unimportant and only a jog in the coastline behind **Hoorigan Point**, rounding and with shallow water one-half to one cable off.

- Measured distance.**—A measured distance has been established between Sawyer Bay and Hoorigan Point. The front beacon of the southern range is located on the north entrance point of Sawyer Bay. The rear beacon is 740 feet (225^m6) 120° from the front one. The front beacon of the northern range is on Hoorigan Point and the rear beacon is 3,200 feet (975^m4) 120° from the front one. The beacons are diamond-shaped and painted black and white. The course for the trial runs is 030°-210°, approximately one mile from the shore, and the distance is 1.77 nautical miles.

- 30 From Hoorigan Point the coast, unbroken, trends almost straight north-northeast for 4 miles to the head of Clavet Bay, another jog in the coastline to the eastward of Clavet Point, which has shallow water one cable off.

Anchorage, for easterly weather, may be had off Hoorigan and Clavet Bays, in from 6 to 7 fathoms (11^m0 to 12^m8) of water.

- 35 From Clavet Point, the unbroken coast trends almost straight northeast by north for 8 miles to the head of the bay, being almost deep-to.

- The head of the bay trends northwest for 1½ miles, thence the northwestern shore trends west-southwesterly for 20 miles to Bare Point. This last stretch of shore is more broken and not so bold as the foregoing, though backed by a ridge of high land about three-quarters of a mile to the rear, and should receive a berth of a mile. The head of the bay, comparatively low, is fronted by shallow water for 2 cables and good anchorage may be had, in from 6 to 8 fathoms (11^m0 to 14^m6) over mud bottom, half a mile offshore.

- 45 **Knobel Point**, 2¾ miles west-southwest from the head of the bay, is a slight projection in the coastline with shoal water 1½ cables off. From this point, the shore continues in the same direction for 2¼ miles to Berry Point. This part of the shore is fronted by a shallow bank 1½ cables wide.

Sour Island, quite small, lies 2½ cables offshore and 3½ cables southwest of Knobel Point.

- 50 **Chipman Rock**, with a depth of 7 feet (2^m1) over it and 4½ cables offshore, lies southwest by west one mile from Knobel Point.

Chart 2301.

Perry Point, on the northwest shore, 5 miles from the head of the bay, has deep water close up to the eastward. To the westward is **Lambert Island**, just separated from the point and extending west-southwest for three-quarters of a mile. To the southward, the point and island are fronted by shallow water for three-quarters of a cable. 5

Conmee Point, the southwest entrance point to Amethyst Bay lies $1\frac{1}{2}$ miles southwestward of Lambert Island. The point is bold and deep-to to the southeastward.

Amethyst Bay is a wide open bight, with shoal water extending off the coast from 2 to 3 cables, until Conmee Point is reached. North of Conmee Point, cliffs form the coast for three-quarters of a mile and the high ridge paralleling this coast approaches quite close to the head of the bay. There are several islands and shoals in the bay, and Amethyst Harbour lies in the eastern side. 10

Buck Island, quite narrow and $1\frac{1}{2}$ cables long, lies $4\frac{3}{4}$ cables east by north from Conmee Point. Shoal water extends to the east-northeast 3 cables. A rock, with less than 6 feet (1^m8) of water over it, lies 50 yards (45^m7) off the west end of Buck Island. 15

Kent Islands, two in number, lie in the northeast part of Amethyst Bay. The southern island, 11 feet (3^m4) high and $1\frac{1}{4}$ cables long east by north and west by south, bears west $2\frac{1}{2}$ cables from Lambert Island, and the other island is $1\frac{1}{2}$ cables to the northward. Shoal water makes off the outer island one cable west-southwest and the same distance to the southeast from the other island. A spot, with 13 feet (4^m0) least water over it, lies $1\frac{1}{2}$ cables to the eastward of the northern Kent Island. Another spot, with 16 feet (4^m9) of water over it, lies one cable eastward from the south Kent Island. These two shoals contract the channel into Amethyst Harbour to one cable in width. 20 25

Amethyst Harbour, in the northeasterly part of the bay of the same name, is formed by Lambert Island, which is just separated from Perry Point. The harbour is three-quarters of a mile long and one-third of a mile in width, and water comparatively shallow. Two fathoms (3^m7) is available entering, and 17 feet (5^m2) will be found inside, and it affords perfect shelter for small vessels from all winds. 30

A Government wharf, 369 feet (112^m5) long, is situated at the head of the harbour. The outer end is T-shaped with a depth of 8 feet (2^m4) at the face. 35

Buoy.—A red and black spar buoy is moored on the southern side of the entrance to Amethyst Harbour.

Directions.—Entering, make the west end of Lambert Island, giving it a berth of 50 yards (45^m7) and follow round at this distance to avoid the shoals on the port hand, until the entrance is reached. Keep the small rock on the port hand close aboard, and steer for a short distance north of the small island in the harbour, and come to anchor 100 yards (91^m4) northeast of it. 40

Keshkabuon or Caribou Island, the largest island in Thunder Bay, 320 feet (97^m5) high, $2\frac{1}{4}$ miles long east and west by half a mile in greatest width, lies with its bold west end south one mile from Perry Point and $2\frac{1}{4}$ miles east from Conmee Point. The island is surrounded by good water, and anchorage, with fair protection, will be found, in 6 fathoms (11^m0) of water over clay bottom, off the eastern part of the north side. 45

Chart 2301.

Buoy.—A red spar buoy is moored on the western side of the above anchorage to mark a reported uncharted rock.

Temple Rock, with less than 6 feet (1^m8) of water over it, and quite small, 5 lies west half a mile from the west end of Keshkabuon Island.

McKenzie Bay, just west of Conmee Point, and $1\frac{1}{4}$ miles wide, is generally shallow with two islands lying in the entrance. **Bacon Island** is three-eighths of a mile west of Conmee Point, and **Lefebvre Island** is just east of the south-west entrance point. McKenzie River enters the head of the bay, through a 10 shallow bank.

A small shoal, with 15 feet (4^m6) of water over it, lies one cable east of Lefebvre Island.

Mary Island, 25 feet (7^m6) high and seven-eighths of a mile long northeast and southwest by 150 yards (137^m2) across, lies $2\frac{1}{2}$ miles west-southwest from 15 Conmee Point and a couple of cables offshore. Shoal water extends off the island half a cable south and $1\frac{1}{4}$ cables southwestward.

Silver Harbour, a shallow boat landing, lies on the main shore inside the northeast part of Mary Island.

Mary Harbour, formed by Mary Island, is about three-quarters of a mile 20 square, and open to the southwestward. The harbour is free from shoals, but shores are lined with shallow water extending out for half a cable, and 2 cables at the head of the bay. In the middle of the harbour, good anchorage will be found in 5 fathoms (9^m1) of water over clay bottom.

Wild Goose Point.—From the head of Mary Harbour, the coast, fronted 25 by shallow water for about a cable off, extends in a general west-southwest direction for $3\frac{1}{2}$ miles to Wild Goose Point. This point extends out 2 cables in a southeast direction forming a shallow bay to the northeastward. Deep water approaches to within 50 yards (45^m7) of the south of the point.

Papoose Islands.—The outer and larger of the two, 15 feet (4^m6) high, lies 30 one mile east from Wild Goose Point. Shoal water extends 50 yards (45^m7) east and 100 yards (91^m4) south from it.

The other Papoose is quite small and lies 2 cables northwest from the outer one. Very shoal water extends one cable west and southwest from it.

Sugarloaf Hill is a conspicuous hill, rising to a height of 250 feet (76^m2), 35 from the comparatively low surrounding land. It is situated $1\frac{1}{4}$ miles west by north from Wild Goose Point and 500 yards (457^m2) back from the shoreline.

Melancon Point, (*Lat.* $48^\circ 29' N.$, *Long.* $89^\circ 06' W.$) is $1\frac{1}{2}$ miles west from Wild Goose Point, the shore between being fringed with shallow water one to 2 cables off. Deep water approaches to within 50 yards (45^m7) of the extreme of 40 the point.

A shoal, with 16 feet (4^m9) of water over it, lies east-southeast 2 cables from Melancon Point and a short distance outside the shorebank.

Bare Point, situated southwest by west 4 miles from Melancon Point is the northern limit of Port Arthur Harbour. The coast, between Melancon and 45 Bare Point, forms a rounding bay, extending in one mile inside the line of the point, and fronted by shoal water extending off from one to 3 cables.

Chart 2301.

About $1\frac{1}{4}$ miles north-northeastward of Bare Point is a slip 1,500 feet (457^m2) long, 150 feet (45^m7) wide, and 21 feet (6^m4) deep, which leads to the wharf and storage area of the Abitibi Power and Paper Co. Entrance to the slip is marked by spar buoys.

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Intake Pipes.—Caution.—About $1\frac{1}{2}$ miles north-northeastward of Bare Point, are the waterworks of the city of Port Arthur. Two intake pipes lead from the waterworks into the lake for 2,350 feet (716^m3) in a $127\frac{1}{2}^\circ$ direction. No vessel should anchor in the vicinity of these pipes.

Chart 2314.

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The ports of **Port Arthur** and **Fort William** constitute practically one large harbour development, comprising diversified types of improvement over an extensive area of lake frontage, and river channels. The two cities are immediately adjoining with electric railway and telephone connection, and, being the Canadian western terminus of Great Lakes navigation and the Lake Superior terminals of both the Canadian National and Canadian Pacific Railways, the twin-ports constitute one of the world's greatest grain handling centres, having 31 grain elevators with a total elevator capacity of 92,780,210 bushels.

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Port Arthur, on the west side of Thunder Bay, had a population of 31,161 in 1951. The principal industries are pulp and paper manufacture, transportation, ship building, dry docks and the grain trade and in the neighbouring districts lumbering and the production of pulpwood and ties. Tugs are available and coal and supplies may be obtained. Ice breakers are used to lengthen the period of navigation in the spring and autumn.

20

Port Arthur Harbour, situated on the west side of Thunder Bay, lies northwest by west distant $15\frac{1}{2}$ miles from Thunder Cape. The limits of the harbour include all the waters of Thunder Bay, westerly or inside the 6-fathom (11^m0) line lying between the easterly boundary of the city of Port Arthur produced, and a line drawn due east from the point where the boundary line between the cities of Port Arthur and Fort William cuts the shore of Thunder Bay. Between these boundaries the harbour has a frontage of nearly 7 miles.

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The harbour has been changed from an exposed roadstead into a well-sheltered and commodious harbour by the construction of breakwaters and by dredging.

The **northern portion** of the harbour extends for about 2 miles southward from Bare Point to Manitoba Pool No. 2 Elevator. On this front are located the plants of the Port Arthur Shipbuilding Co., and several elevator and paper companies. It is protected by a rubble-mound breakwater extending from Bare Point for 1,188 feet (362^m1) in a 171° direction; thence 218° for 2,083 feet (634^m9); thence 228° for 1,904 feet (580^m3) to the northern entrance channel, which is 500 feet (152^m4) wide, with a natural depth of 26 feet (7^m9). From this entrance a breakwater extends 228° for 6,115 feet ($1,863^m9$) to the main entrance, which is 510 feet (155^m4) wide; thence the breakwater extends for 5,350 feet ($1,630^m7$) in a 210° direction, protecting the centre portion of the harbour.

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Lights.—Fog signals.—North Entrance.—A *flashing red* light is exhibited, at an elevation of 25 feet (7^m6), from a steel tower painted white, situated on the breakwater on the northern side of the north entrance.

Chart 2314.

A *flashing green* light is exhibited, at an elevation of 25 feet (7^m6), from a lantern on a pole, on the breakwater at the southern side of the northern entrance.

A fog trumpet sounds *one blast* every 15 seconds at the above light.

- 5 **Main entrance.**—A *flashing red* light is exhibited, at an elevation of 48 feet (14^m6), from a white square wooden tower, surmounted by a red lantern, on the end of the breakwater at the north side of the main entrance. (*Lat.* 48° 26' N., *Long.* 89° 12' W.).

A fog tyfon sounds *one blast* every 20 seconds from the above light.

- 10 A *flashing green* light is exhibited, at an elevation of 14 feet (4^m3) from a mast with a black and white daymark, on the breakwater at the south side of the main entrance.

Depths.—Buoys.—A basin in front of the piers, described below, and extending to the harbour breakwaters, has been dredged to a limiting depth of

- 15 22½ feet (6^m9) The northeastern side of this area is marked by two red spar buoys, and the southeastern side by two black spar buoys.

For three-quarters of a mile southwestward of the above black buoys is an area bounded by the breakwater and the Harbour line (shown on chart), with a least depth of 20½ feet (6^m3).

- 20 The extreme northeastern portion of this section of the harbour is enclosed by a log boom.

Dry Dock.—About three-quarters of a mile southwest of Bare Point is the plant and dry dock of the Port Arthur Shipbuilding Company. The dock has the following dimensions: Greatest available length, 716 feet (218^m2); Floor width, 86 feet (26^m2); Extreme breadth at L.W. 76 feet (23^m2); Depth on sill at L.W. 16 feet 02 inches (4^m9). A channel with a depth of 16½ feet (5^m1) leads to the dry dock, and another with a depth of 21 feet (6^m4) leads to the fitting-out berth, with 17½ feet (5^m4) alongside the berth. A red spar buoy is moored off the fitting-out berth.

- 30 **Piers in northern section.**—Two thousand feet (609^m6) southwestward of the dry dock are several elevator piers. The northern pier, on which are the elevators of the United Grain Growers and of the Manitoba Pool No. 9, is about 1,000 feet (304^m8) long and 400 feet (121^m9) wide, with a narrow projection about 350 feet (106^m7) long extending from its outer end.

- 35 A slip on the northern side, alongside the Grain Growers elevator, has been dredged to 25 feet (7^m6). A red and black spar buoy marks the intersection of the northern side of this slip with the western side of the dredged channel leading to the dry dock. The outer southern end of the slip is marked by a black spar buoy.

- 40 The southern pier, on which are the Saskatchewan Pool elevators Nos. 4A and 4B and the Richardson elevator, is about 1,400 feet (426^m1) long and 750 feet (228^m6) wide. An indentation in the outer end of the pier is about 350 feet (106^m7) in length and 100 feet (30^m5) in breadth.

- 45 Between the above two piers is a slip dredged to a limiting depth of 24½ feet (7^m4) to accomodate vessels loading at the Manitoba Pool No. 9 Elevator or the Saskatchewan Pool Elevators. The northern outer end of this slip is marked by a red spar buoy.

- 50 Along the southwestern side of the southern pier is a slip dredged to 22 feet (6^m7) for a distance of 675 feet (205^m7) from the outer end, the inner portion having a depth of 20 feet (6^m1). A black spar buoy marks the southwestern side of the slip.

Chart 2314.

The **centre portion** of the harbour extends from the Manitoba Pool No. 2 Elevator to abreast the north side of the Northern Wood Preservers pier, about 3 miles southwestward of Bare Point. The remaining portions of an old timber breakwater, which is gradually being removed, commences about 1,600 feet (487^m7) southward of the outer end of the Manitoba Pool No. 2 pier and extends for 2,100 feet (640^m1) in a 208° direction to the old centre entrance, 350 feet (106^m7) wide, now shoaling and no longer used. From the south side of the gap a further 500 feet (152^m4) in a similar direction; thence 1,000 feet (304^m8) in a 165° direction.

Light.—A *flashing green* light is exhibited, at an elevation of 18 feet (5^m5), from a white, wooden tower on the northern end of the inner breakwater.

The main entrance channel, which is buoyed, and the channel leading to the Manitoba Pool No. 2 Elevator has been dredged to a least depth of 25 feet (7^m6).

Between the old timber breakwater and the piers, as far south as the Northern Wood Preservers pier, the least depth in the channel is 22 feet (6^m7).

Piers in centre section.—The Manitoba Pool No. 2 Elevator has a slip on its western side, with a depth of 23 feet (7^m0) leading from the dredged channel. A black spar buoy marks the outer western side of the slip. About 1,000 feet (304^m8) westward of the elevator is a wharf known as the Seaplane Wharf. There is a small marine railway at the wharf.

About 3,000 feet (914^m4) southwestward of the outer end of the Manitoba Pool No. 2 Elevator are situated the Canadian Pacific Railway pier and three Canadian National Railways piers. The slip on the north side of the Canadian Pacific pier is 350 feet (106^m7) long, 200 feet (61^m0) wide and 17 feet (5^m2) deep. The slip between the Canadian Pacific Railway pier and the Canadian National Railways pier No. 1 is 950 feet (289^m5) long, 135 feet (41^m1) wide and 17 to 19 feet (5^m2 to 5^m8) deep. The slip between the Canadian National Railways piers Nos. 2 and 3 is 1,000 feet (304^m8) long, 160 feet (48^m8) wide and 18 to 20 feet (5^m4 to 6^m1) deep. A slip beside the Steel Dock, on the south side of the southern pier, is 600 feet (182^m9) long and from 80 to 120 feet (24^m4 to 36^m6) wide with a depth of 21 feet (6^m4).

The Canadian National Railways elevator pier lies 1,300 feet (396^m2) south of the above piers. On the north side is a dredged slip from 125 to 200 feet (38^m1 to 61^m0) in width and 22 feet (6^m7) deep. The Saskatchewan Pool Elevator No. 6 occupies the south side of the pier, and the slip alongside has been dredged to a depth of 25 feet (7^m6). The outer end of the slip is marked by a black spar buoy.

There are two piers lying between the Canadian National Railways commercial piers and the same companies elevator piers, but they are unfit for use.

The **southern portion** of the harbour, from the Northern Wood Preservers pier to the south city boundary, is protected by a breakwater. Continuing from the breakwater described on page 485 it extends for 2,831 feet (862^m8), in a 164° direction, to the south entrance, which is 369 feet (112^m5) wide. From the south side of this entrance it continues in the same direction for 4,945 feet (1,507^m2) to a position off the mouth of the Kaministiquia River.

The depths in the southern portion of the harbour are from 25 feet (7^m6) to 17½ feet (5^m4). The least depth being in the southern part of this section

Buoyage.—Booming grounds.—The harbour is suitably buoyed and several sections of it are used as booming grounds.

The positions of the buoys and booming grounds may best be seen on the chart.

Chart 2314.

Lights.—South entrance.—A *flashing red* light (Lat. $48^{\circ} 25' N.$, Long. $89^{\circ} 12' W.$) is exhibited, at an elevation of 37 feet (11^m3), from a lantern on a white mast with a white shed at base, on the breakwater on the north side of the southern
5 entrance.

A *flashing red* light, privately maintained, is exhibited, at an elevation of 7 feet (2^m1), from a pile cluster, 321° , 548 feet (167^m0) from the above light.

A *flashing green* light is exhibited, at an elevation of 37 feet (11^m3), from a lantern on a white mast with white shed at base, on the breakwater on the south
10 side of the southern entrance.

Piers in the southern section.—The following is a list of the piers in the southern section of the harbour: Northern Wood Preservers; C.N.R. Ore; Manitoba Pool No. 3 Elevator; Canada Malting Co. Elevator; Stewart Elevator; Saskatchewan Pool No. 7 Elevator; Thunder Bay Elevator; Mc-
15 Cabe Elevator; Pool Elevator No. 1; Superior Elevator.

The Northern Wood Preservers pier has a frontage of 600 feet (182^m9) with a depth of $21\frac{1}{2}$ feet (6^m6) alongside. There is a conspicuous chimney on the northeastern end of the pier.

The Canadian National Railways coal and ore dock extends to the edge of
20 the dredged area, and is 1,520 feet (463^m3) long. The slip on the north side of this pier has been dredged to a least depth of 26 feet (7^m9) and on the south side to a similar depth. A slip on the north side of the Manitoba No. 3 elevator pier has a limiting depth of 25 feet (7^m6).

A similar slip has been dredged between the elevator piers of the Canada
25 Malting Company and the James Stewart Company.

Between the Pool elevator No. 7 and the Thunder Bay elevator pier is a slip with depths of from 22 to 25 feet (6^m7 to 7^m6).

Between the McCabe elevator pier and the Pool elevator No. 1 is a slip with a depth of 24 feet (7^m4).

30 The slip on the south side of Superior elevator pier has a limiting depth of 25 feet (7^m6).

Buoys.—The approaches to the dredged slips are suitably buoyed.

Four streams, flowing through the city, empty into Port Arthur Harbour. The northernmost, **Current River**, enters between the dry dock property and the
35 United Grain Growers pier. Its mouth is dammed and the stream used for power purposes. The next one south, **McVicars Creek**, enters the harbour between Manitoba Pool No. 2 elevator pier and the Canadian National Railways commercial docks. **McIntyre River** enters alongside the Superior elevator pier.

The **Neebing River** enters the harbour near its southern boundary. A
40 dredged channel with a least depth of 11 feet (3^m4), leads from the harbour to the river mouth. Three red spar buoys mark the northern side of the channel, and one black spar buoy the southern.

Radio station.—There is a radio station at Port Arthur.

Navigation season.—Navigation opens in this district about April 15 and
45 closes about December 15.

Fort William, situated on the western side of Thunder Bay and adjoining Port Arthur to the southward, had in 1951 a population of 34,947. It lies at the mouth of the **Kaministiquia River**, which rises in Dog Lake, elevated about 778 feet (237^m2) above Lake Superior, and flows southerly and easterly
50 for a distance of about 40 miles to Lake Superior.

Chart 2314.

Above a point about 10 miles upstream, the river is obstructed by shoals, falls and rapids. Within $2\frac{1}{2}$ miles of the mouth, the river bifurcates twice, the two subsidiary outlets being known as the **Mission** and **McKellar Rivers**, respectively debouching into the bay about $2\frac{1}{2}$ miles and one mile southward of the main mouth. 5

The shoals extending offshore in the vicinity of the river mouths are formed of sandy silt and have a very gentle slope, so that small craft may ground as far as half a mile offshore.

Old Dumping Ground Shoal, with a depth of 13 feet (4^m0) over it, lying nearly $1\frac{1}{2}$ miles southeastward of Fort William front light, and **Burke Shoal**, with a similar depth over it, lying about three-quarters of a mile southeastward of the Mission River entrance light, mark the easterly limits of the offshore foul area. 10

Buoys.—The eastern side of both the above shoals is marked by a red spar buoy. 15

Depths.—Owing to the silt and scour, the depths in Fort William Harbour are constantly changing, but are reported to be maintained to a least depth of $23\frac{1}{2}$ feet (7^m1), except in some marginal areas.

Channels.—Extensive dredging operations have provided three entrance channels through the bar at the mouth of the Kaministikwia, McKellar and Mission Rivers, and have deepened and widened the channels in the three rivers. 20

Three turning basins are provided; the Westfort, in the Kaministikwia River, about half a mile above the C.N.R. swing bridge; one at the junction of the Kaministikwia and Mission Rivers and one at the mouth of the Mission Channel known as the C.N.R. turning basin. 25

The improved river channels have an aggregate length of 14 miles.

The **Kaministikwia River Channel** across the bar at the entrance and in the river up to the Westfort turning basin varies in width from 160 to 600 feet (48^m8 to 182^m9) excepting through the bridges and in the turning basins. 30

There are two bridges across the river, the Canadian Pacific Railway lift bridge about 2 miles from the mouth, with a clearance of 125 feet (38^m1), and the Canadian National Railway swing bridge, about half a mile below the Westfort turning basin, with a clearance of 100 feet (30^m5). Immediately above the Westfort turning basin is the wharf of the Great Lakes Paper Co. 35

Breakwater.—Buoys.—The southern side of the entrance channel to the Kaministikwia River is protected by a breakwater, which is not yet completed. In 1954, the outer 1,200 feet (365^m8) had been constructed. When completed it will run in a 254° direction to the shore. 40

Three red spar buoys mark the northern side of the entrance channel, and four black spar buoys the southern side.

Railway tracks are laid on the docks. A vessel cannot lie alongside the Empire elevator dock with a southeast wind.

Chart 2314.

The following docks are situated on the Kaministikwia River.—

NORTH SIDE OF RIVER

Name of Dock	Length	Width	Height
	feet	feet	feet
Great Lakes Paper Co. dock.....	810	100	10
Electric elevator dock.....	100	10	7
Electric elevator dock.....	105	12	5
Northwestern elevator dock.....	200	12	5
Canadian Iron Foundries.....	378	10	7
Plymouth Cordage dock.....	308	10	4
Paterson elevator dock.....	630	11	6
Saskatchewan Pool No. 5 dock.....	300	7-21	7
Fort William elevator "F" dock.....	305	7-10	6-5
Fort William elevator "E" dock.....	410	12	6-5
Westland elevator dock.....	541	7-10	6
C.P.R. freight shed No. 7.....	461	8	6
International Harvester Co.....	297	16	5
Murphy coal dock.....	845	40	6
Ogilvie Milling Co.'s dock.....	953	16	5
Canadian Government Rys. freight shed.....	600	10-20	5
C.P.R. freight shed No. 6.....	1,352	12-20	5-6
City dock.....	285	20	4-5
Wharf.....	882	20	7
Wharf.....	950	15	7
C.P.R. docks.....	1,350	18-30	6-7
C.P.R. sheds "3", "4", and "5".....	1,928	10	5
C.P.R. coal dock.....	1,803	60	5
Imperial Oil dock.....	400	15	8
Empire elevator dock.....	750	10-100	7

SOUTH SIDE OF RIVER

Imperial Oil dock.....	500	15	5
C.P.R. slip No "1", south side.....	1,300	12-25	4-5

Mooring rings.—On the south side of the river, on Island No. 1, 30 mooring rings 6 inches in diameter have been placed for the use of vessels. They extend for a distance of 2,700 feet (823^m0) southwesterly along the bank from abreast the upper end of the Canadian Pacific Railway freight sheds.

Lights.—Fog signal.—A *flashing red* light every 10 seconds (Lat. 48° 24' N., Long. 89° 12' W.) is exhibited, at an elevation of 17 feet (5^m2), from a concrete structure surmounted by a steel skeleton tower, on the southerly end of the breakwater at the north side of the Kaministikwia River entrance channel.

A two-tone fog tyfon sounds *one* blast every 60 seconds from the light-tower.

Two *fixed red* leading lights are exhibited on the Empire Elevator, which bearing 254½°, lead into the Kaministikwia River. The front light, at an elevation of 110 feet (33^m5), is situated on the southeast corner of the elevator; the rear light, at an elevation of 142 feet (43^m3), is situated 147 feet (44^m8), 254½° from the front light.

Kaministikwia River cables and water mains.—Submarine power and telephone cables cross the river on the south side of the Canadian Pacific Railway lift bridge. Between the Westland Elevator and Canadian Pacific Railway freight shed No. 7, an overhead transmission line crosses the river with a clearance of 142 feet (43^m3).

Chart 2314.

Two 18-inch water mains and a submarine telephone cable cross the river at the bend above the Westland Elevator.

Submarine power and telephone cables and water mains cross the river on both sides of the Canadian National Railway swing bridge.

5

Lighted warning signs are placed in the vicinity of the above crossing.

McKellar River and Channel.—The McKellar River, about 1½ miles long, has a maximum width of 450 feet (137^m2) at the outer end. The width through the Canadian Pacific Railway lift bridge is 80 feet (24^m4).

An entrance channel to Thunder Bay across the bar is about 6,000 feet (1,828^m8) long and 300 feet (91^m4) wide, and had, in 1954, a limiting depth of 19 feet (5^m8).

10

Bridge.—The Canadian Pacific Railway lift bridge crosses the McKellar River near its junction with the Kaministikwia River.

McKellar River cable crossings.—A submarine power cable crosses the river on the east side of the bridge, and a submarine telephone cable close above the inner end of the Canadian Pacific Railway coal dock.

15

Docks.—The following docks are situated on the McKellar River:—

NORTH SIDE OF RIVER

Name of Dock	Length	Width	Height
	feet	feet	feet
C.P.R. coal dock.....	1,815	7	4·5
McColl Frontenac Oil loading dock.....			

Lights.—Buoys.—Two *fixed red* leading lights are exhibited, which, bearing 268°, lead into the McKellar River, but north of the centre line of the channel. The front light, at an elevation of 29 feet (8^m8), is situated at the inner end of the Canadian Pacific Railway coal dock; the rear light, at an elevation of 45 feet (13^m7), is situated 1,056 feet (321^m9), 268° from the front light. Both lights are exhibited from steel towers with white daymarks.

20

A black light-and-bell-buoy, showing a *flashing white* light, is moored at the outer end of the McKellar River entrance channel. The buoy is fitted with a radar reflector.

25

Three red spar buoys mark the northern side of the entrance channel, and two black spar buoys the southern side.

Mutton Island, which is small, and **Mutton Shoal**, with less than 6 feet (1^m8) of water over it, lie southward of the McKellar River entrance channel.

30

Mission River and Channel.—The Mission River has a length of about 2 miles. An entrance channel about 4,500 feet (1,371^m6) long and 600 feet (182^m9) wide has been dredged through the bar to Thunder Bay. A revetment wall has been built along the south side of the entrance channel for 4,100 feet (1,250^m0) and also along the south and southeast sides of the Canadian National Railway turning basin and on both sides of Slip No. 1 and on the south side of Slip No. 2, of which are near the mouth of the river.

35

Chart 2314.

Along the southeast side of the turning basin is a shoal caused by the discharge of pulp-mill waste. A black spar buoy marks the westerly limit of the shoal.

5 **Breakwater.**—A breakwater extends southward from the outer end of the channel revetment wall and at right angles to it. The first portion of 1,330 feet (405^m4) is composed of cribwork superstructure on pile foundation with a concrete top, separated by a gap of 375 feet (114^m3) from a 1,000-foot (304^m8) length of rubble mound breakwater.

10 **Docks.**—The following docks are located on the Mission River:—

NORTH SIDE OF RIVER			
Name of Dock	Length	Width	Height
	feet	feet	feet
Edible Oils Plant dock.....	625	4	5·5
SOUTH SIDE OF RIVER			
Name of Dock	Length	Width	Height
	feet	feet	feet
Fort William coal dock.....	1,866	20	6
Fort William hard coal dock.....	500	60	5
Searle elevator, slip No. 2.....	680	6 to 10	5
Grand Trunk elevator dock.....	338	11	8
C.N.R. freight shed.....	2,120	11	4
Revetment wall north side slip No. 1.....	1,373	11	4-8
“ south side slip No. 1.....	1,330	11	4
“ slip No. 1 to slip No. 2.....	540	11	5·5
“ west end slip No. 1.....	302	11	8
“ slip No. 1 to entrance.....	1,535	11	8
“ south side slip No. 2.....	682	11	5·5
“ south side entrance.....	4,100	11	4·8

Buoy.—A black spar buoy is moored about 400 feet (121^m9) eastward of the front leading light (*See* below).

15 **Mission River cable and water mains.**—Two 16-inch water mains and a submarine telephone cable cross the river near the Fort William coal docks and a submarine telephone cable about 900 feet (274^m3) southward of the water mains; lighted warning signs are placed in the vicinity of the crossings.

20 **Lights.—Fog signal.—Buoys.**—A *flashing green* light every 2 seconds (*Lat.* 48° 21' N., *Long.* 89° 12' W.) is exhibited, at an elevation of 40 feet (12^m2) from a building surmounted by a steel tower on the outer end of the revetment wall, on the south side of the Mission River entrance channel.

A fog diaphone sounds *one* blast every 30 seconds from the light-station.

A *flashing red* light-buoy marks the outer northern side of the dredged channel.

Chart 2314.

Three red spar buoys mark the northern side of the entrance channel.

A *fixed green* light is exhibited, at an elevation of 16 feet (4^m9), from a steel structure with a white daymark, on the inner end of the entrance channel revetment wall.

Two *fixed red* lights and a *flashing green* light are exhibited from Slip No. 3, inside the mouth of the Mission River, The lights in line, bearing 290°, lead 20 feet (6^m1) southward of the centre line.

The front light is exhibited, at an elevation of 31 feet (9^m4), from a steel, skeleton tower with white daymark, at the outer end of Slip No. 3. A *flashing green* light is exhibited, at an elevation of 28 feet (8^m5) from the same structure.

The rear light is exhibited, at an elevation of 49 feet (14^m9), from a similar structure, 880 feet (268^m2), 290° from the front light.

Bridge signals.—Owing to local conditions, the following signals must be given for the opening of the bridge specified, in Fort William Harbour.

McKellar bridge.—Two long and one short blasts.

Kaministiquia bridge.—Two long and two short blasts.

West Fort William bridge.—Two long and two short blasts.

On the Canadian Pacific Railway lift bridges, a *green* light is shown up and down the channel when the passage is open and a *red* light when the passage is closed. Each side of the channel, through the bridges, is marked by a *white* light.

An electric switch, installed in the signal tower of the Canadian National Railways drawbridge, is operated at night as follows: When a vessel whistles to have the bridge opened, the operator, if in a position to open the draw, immediately flashes all lights in the tower off and on three distinct times.

The channel through bridges is marked on each side by a *white* light. A *green* light is shown up and down the channel when the passage is open and a *red* light when the passage is closed.

Navigation opens in this district about the 19th of April and closes about the 12th of December.

Chart 2301.

Welcome Islands, lying 3 miles east of the mouth of Mission River, consists of two large and two small islands. The bank, upon which the two small islands are located, extends seven-eighths of a mile south of the western island. The eastern island is surrounded by shallow water, making off 50 yards (45^m1) northward, three-quarters of a cable eastward and 1³/₄ cables to the south-westward. This bank is separated from the bank from the western island by a passage 100 yards (91^m4) wide and 20 feet (6^m1) deep. A spot, with 10 feet (3^m0) of water over it, lies 1³/₄ cables south of the south point of the eastern island. Another spot, with 25 feet (7^m6) of water over it, lies 2¹/₂ cables east of the eastern point of the same island, and only 1¹/₂ cables southwest of the track usually followed by vessels.

The bank, under 10 fathoms (18^m3) of water, surrounding the islands, extends northeastward from the east island for 2 miles. A depth of 6 fathoms (11^m0) will be found three-quarters of a mile inside the extreme of the bank.

Light.—**Fog signal.**—A light (Lat. 48° 22' N., Long. 89° 07' W.) showing a *flashing white* light every 10 seconds is exhibited, at an elevation of 112 feet (34^m1), from a white, square wooden building on the northeastern side of the eastern Welcome Island.

Chart 2301.

A fog diaphone sounds *2 blasts* every *70 seconds* from a white, rectangular wooden building close northeastward of the lighthouse.

Light-buoy.—A red light-buoy, showing a *flashing red* light, marks the southern extremity of the bank extending southward from the western Welcome Island.

A shoal, with a depth of 12 feet (3^m7) over it, lies about $3\frac{1}{2}$ cables east-southeastward of the southeast point of the western Welcome Island.

Schwitzer Shoal, with $19\frac{1}{2}$ feet (5^m9) least water over it, lies east-northeast $3\frac{1}{2}$ miles from Welcome Island light.

Coast.—From the Mission River entrance, the coast takes a general trend of south by east for 3 miles to **Grand Point**, the coast between being fronted by shoal water under a depth of 18 feet (5^m5) extending off from 4 to 5 cables, with the exception of **Whiskyjack Point**, about half-way, from which the bank extends 2 cables. Grand Point is almost deep-to with a shallow bay, Brule Bay, south of it, or between it and McNab Point, 6 cables to the southwest.

Wharf.—At Chippewa Park, on Whiskyjack Point, is a Government wharf 873 feet (266^m1) long extending to a depth of 6 feet (1^m8).

Grand Reef, with less than 6 feet (1^m8) of water over it and extending, under 18 feet (5^m5), for $1\frac{1}{2}$ cables north and south from the shallowest spot, lies 3 cables east of Grand Point.

Buoy.—A black spar buoy is moored off the eastern side of Grand Reef.

An L-shaped wharf, length 253 feet (77^m1), length at face 71 feet (21^m6), depth at face 9 feet (2^m7), lies on the eastern shore of Squaw Bay.

Squaw Bay, just westward of McNab Point, is quite open to the southward and eastward. Shoal water extends 2 cables off the head of the bay and the south side of McNab Point. The west shore of the bay is deep-to.

Squaw Island, 200 yards (182^m9) long northwest and southeast by 100 yards (91^m4) across, lies one cable southwest by west from the south extreme of McNab Point.

Chart 2311.

From the west shore of Squaw Bay, the coast, which is quite abrupt, for a mile, takes a general south-southwest trend for 5 miles to Russell Point. For the most part, this stretch of shore is bold, except about half-way, where Lomond River enters the bay, a bank makes off about a cable, and just north of Russell Point the bank makes off the same distance.

Russell Point, the northwest entrance point to Flatland Harbour, bears southwestward distant $6\frac{1}{4}$ miles from Grand Point. From Russell Point, the shore trends in a general southerly direction for 2 miles to Wyllie Point, forming the west side of Flatland Harbour, and bordered by shoal water for 150 yards (137^m2) off.

Flatland Harbour, lying in the southwest corner of Thunder Bay, is formed by the main shore to the westward, Flatland Island to the eastward and Birch and Dog Islands north and south respectively. The main entrance, only a

Chart 2311.

cable wide between the banks on either shore with 3 fathoms (5^m5) of water, is west of Birch Island. Good anchorage will be found, in a little over 4 fathoms (7^m3) of water over mud bottom, with good shelter, in an area about three-quarters of a mile square. Entrance may also be made east of Dog Island between the shoals off either shore, but it is very narrow and not recommended. 5

Flatland Island may be called the southwest entrance point to Thunder Bay. The island is 25 feet (7^m6) high, 1½ miles long north-northeast and south-southwest by 1¼ miles in greatest width. It is surrounded by a shallow bank, which includes Campbell and Birch Islands to the eastward and westward, respectively, and extends 1¼ miles north-northeast from the north point of the island to 6 feet (1^m8) of water. **Flatland Reef**, with 6 feet (1^m8) of water over it, lies on the same bank northward three-quarters of a mile from the same point. The shallow bank extends from one-half to one cable southward of Flatland Island, and 1½ cables southwestward, almost joining the bank making out 2 cables northeastward from Dog Island. On this last bank, near the outer end, is a rock with less than 6 feet (1^m8) of water over it. 10 15

Clearing mark.—The south shoulder of Thunder Cape touching Pie Island, bearing 071°, passes 50 yards (45^m7) northwest from the extreme of the shoal water making off northward from Flatland Island. 20

Birch Island, lying one mile westward of the north point of Flatland Island, is 3 cables long and quite narrow. A shallow spit, with a depth of 9 feet (2^m7) on it, extends south by east 3 cables from the middle of the island.

Dog Island, long and narrow, lies on the shorebank which occupies most of the area between Flatland Island and Wyllie Point. 25

Rowan Reef, one foot (0^m3) high, lies 4 cables west of the southwest point of Flatland Island, and almost in the middle of the south entrance, making this entrance still more difficult of access.

Campbell Island, lying east-northeast 5 cables from the southeast point of Flatland Island, is one cable long and quite narrow. It is joined to Flatland Island by shallow water, but deep-to at its northeast point, from which the ship track passes 1¾ cables off. 30

Alexander Reef, one foot (0^m3) high, lies 3½ cables southeastward of the southeast point of Flatland Island. Deep water comes quite close up to this reef on the southeastward. 35

Pie Island.—Pie Island, 860 feet (262^m0) high at “Le Pâté” near the west end, is about 7 miles long east and west by about 4 miles in greatest width, and has only slight indentations in the coastline, with the exception of the south side at Dawson Bay. To the southward the shores of the island are deep-to; to the northward and westward, shoal water makes off the point, from one to 1½ cables and 4 cables to the northeastward. Turtle Head, the eastern extreme of the island bears southwest 5½ miles from Thunder Cape light. 40

Anchorage.—From south winds, fair shelter with good anchorage, in from 5 to 6 fathoms of water over clay bottom, will be found about three-quarters of a mile off the north shore, and from northerly winds Dawson Bay provides fair shelter. 45

Chart 2311.

From Turtle Head, the bold southeast shore is formed of a rock cliff deep-to extending southwestward for $5\frac{1}{4}$ miles to Greenstone Point, the most southerly point of the island. Several small islands, rocks, and shoals lie off this shore.

- 5 **Angus Islands** consist of a string of islands and shoals extending in a northeast and southwest direction for nearly a mile and surrounded by deep water. As no indication by the lead will be given, great caution should be exercised approaching in thick weather. The largest island of the group, 45 feet (13^m7) high, 250 yards (228^m6) long by 50 yards (45^m7) wide, lies southeast $1\frac{1}{4}$ miles from Turtle Head.

Light.—Fog signal.—Radio beacon.—A light (*Lat.* $48^\circ 14' N.$, *Long.* $89^\circ 00' W.$) showing a *flashing white* light every 20 seconds, is exhibited, at an elevation of 70 feet (21^m3), from a white square wooden building, surmounted by a lantern with a red roof, on the north end of Angus Island.

- 15 A fog diaphone sounds *one blast* every 30 seconds from a building close southeastward of the lighthouse.

There is a radio beacon at the lighthouse.

- 20 A small rock, 10 feet (3^m0) high, lies about $1\frac{1}{4}$ cables northeastward of Angus Island, and a shoal with a depth of less than 6 feet (1^m8) over it, lies one cable to the eastward of the rock.

From the largest island, the string extends southwestward for $3\frac{1}{2}$ cables, terminating in a rock, with less than 6 feet (1^m8) of water over it, which is half a cable beyond the last dry rock.

- 25 **Hamilton Island**, 30 feet (9^m1) high and lying $1\frac{3}{8}$ miles south from Turtle Head, is surrounded by deep water, except a spot with less than 6 feet (1^m8) of water over it, half a cable north of it.

Cone Island, 71 feet (21^m6) high and half a mile south of Hamilton Island, is also surrounded by deep water, with the exception of a spot with less than 6 feet (1^m8) of water over it, 75 yards (68^m6) to the southward.

- 30 **Craig Rock**, one foot (0^m3) high and with shoal water extending from it east-northeast and west-southwest half a cable, lies $2\frac{1}{2}$ cables off Pie Island and $1\frac{3}{4}$ miles southwestward of Turtle Head.

A rock with less than 6 feet (1^m8) over it, which breaks, lies about $3\frac{1}{4}$ miles, 240° , from Angus Island lighthouse.

- 35 **Baker Rock**, with less than 6 feet (1^m8) of water over it and deep water about it, is situated east 2 miles from Greenstone Point and seven-eighths of a mile off the cliffs of Pie Island.

- 40 **Lord Stanley Rock**, with 6 feet (1^m8) of water over it, is situated east-southeast $1\frac{1}{2}$ miles from Greenstone Point and a spot with 9 feet (2^m7) of water over it, lies $1\frac{1}{2}$ cables southwest by west from it; both shoals are surrounded by deep water.

- 45 **Dawson Bay.**—The west side of Greenstone Point trends northerly for a mile, forming the east side of Dawson Bay. This bay is included between Greenstone and Keefer Points, a distance of $1\frac{3}{4}$ miles. It is quite deep and open to the southward, but towards the head of the bay good anchorage will be found, in 6 fathoms (11^m0) over sand bottom.

Chart 2311.

Keefer Point, the west entrance point to Dawson Bay, is fronted by shoal water making off $1\frac{1}{4}$ cables southerly. From Keefer Point, the southwest shore of the island takes a general trend of north-northwest for $1\frac{1}{3}$ miles to the lighthouse. This stretch of shore is fronted by shoal water extending from one-half to one cable off the points, and about one mile along the stretch, a sharp point makes out, upon which are several buildings and a small wharf on the northwest side. 5

Deadman Island, 11 feet (3^m4) high, 150 yards (137^m2) long and very narrow, lies $1\frac{3}{8}$ miles westward of Keefer Point. Shoal water makes out $1\frac{1}{2}$ cables to the southward, and one cable eastward, including a small rock 5 feet (1^m5) high which is 100 yards (91^m4) east-northeast from the island. Deep water approaches close to these rocks on the north side. 10

Steamboat Island, 16 feet (4^m9) high and quite small and deep-to, with the exception of a rock, with less than 6 feet (1^m8) of water over it, lying 50 yards (45^m7) to the southwestward, is situated $2\frac{1}{2}$ cables eastward of Deadman Island and one mile off Pie Island. 15

The southwest entrance to Thunder Bay passes between Campbell and Deadman Islands seven-eighths of a mile apart.

Light.—A *flashing white* light (Lat. $48^{\circ} 14' N.$, Long. $89^{\circ} 10' W.$) is exhibited, at an elevation of 32 feet (9^m8), from a steel tower with a white daymark on the west side of Pie Island, about $1\frac{1}{3}$ miles north-northeastward of Keefer Point. 20

From the lighthouse, the unbroken northwest shore of the island takes a general northeast trend for $3\frac{1}{2}$ miles, thence easterly for $2\frac{1}{4}$ miles. This stretch of shore is bordered by shoal water extending one-half to one cable off the points. Beyond the last mentioned point, the coast trends to the southeastward for $2\frac{1}{2}$ miles to Turtle Head. For the first part of this distance on the northeastern part of the island, a very shoal bank makes out $3\frac{1}{2}$ cables tapering down to half a cable midway to Turtle Head. Just north of Turtle Head, the water is fairly good, but a mile northwest from the point a rock, one foot (0^m3) high, will be found $2\frac{1}{2}$ cables offshore. 25 30

Two small rocks, 17 feet (5^m2) high and surrounded by deep water, lie three-quarters of a mile northward from Turtle Head.

The northeastern shore of the island should receive a berth of a mile.

Coast.—**Sturgeon Point**, bold and steep-to, lies $1\frac{1}{2}$ miles southwestward of Wyllie Point. **Sturgeon Island**, quite small, lies three-quarters of a cable northeast of the extreme of the point. 35

From Wyllie Point, the coast trends southwest by west for $1\frac{1}{4}$ miles, thence swings to the westward for three-quarters of a mile to the narrow entrance to **Sturgeon Bay**. **Zealand Spit**, with less than 6 feet (1^m8) of water near the outer end, makes out $2\frac{1}{2}$ cables, three-quarters of a mile from Wyllie Point. On the north side of Sturgeon Point, the abrupt shore is deep-to for three-quarters of a mile, but at the entrance to the bay it shoals. The entrance is $1\frac{1}{2}$ cables wide and 8 feet (2^m4) of water may be carried through. From the entrance, the bay turns to the northward for $1\frac{1}{4}$ miles and is about three-quarters of a mile wide. It affords perfect shelter for small craft. The rocky cliffs on the west side rise to a height of 550 feet (168^m0). 40 45

Anchorage for large craft may be had off the entrance to Sturgeon Bay, in 5 to 6 fathoms (9^m1 to 11^m0) of water, off the abrupt northeast shore of Sturgeon Point. 50

Chart 2311.

From Sturgeon Point, the abrupt, rocky coast takes a general southwest trend for $2\frac{1}{4}$ miles to the northwest corner of Mink Bay. This stretch of shore is quite clean and free from shoals.

- 5 **Mink Bay**, open to the eastward, is free from shoals. **Nisbet Island**, 10 feet (3^m0) high, is in the northeast corner of the bay and **Muskrat Island**, 15 feet (4^m6) high, in the south part, is deep-to.

- 10 **Mink Point**, sharp and deep-to, rises to a height of 480 feet (146^m3) to the tops of the trees half a mile west from the extreme of the point and bears south-southwest distant $2\frac{1}{2}$ miles from Sturgeon Point. A string of islands and shoals extends $3\frac{1}{2}$ miles northeastward, off the point terminating in Sly Rock, one foot (0^m3) high.

- 15 **Light**.—A *flashing white* light, (Lat. $48^{\circ} 08'$ N., Long. $89^{\circ} 18'$ W.) is exhibited, at an elevation of 30 feet (9^m1), from a steel tower with a white daymark on Mink Point.

Mink Island, the inner island of the string, 266 feet (81^m1) high, $1\frac{1}{2}$ miles long northeast and southwest and $1\frac{1}{4}$ cables wide towards the northeast end, is separated from Mink Point by a passage 700 yards (640^m0) wide, through which is a deep water channel a short distance off the point.

- 20 **Beacon**.—A rock, with less than 6 feet (1^m8) of water over it, and lying 3 cables northeastward of Mink Island, is marked by a white, pyramidal, concrete beacon 15 feet (4^m6) high. The ship channel passes between the rock and Sister Islands.

- 25 **Sister Islands**, separated by a cable of shallow water, lie 2 miles south-eastward of Sturgeon Point. The southwest end of the southwest island is deep-to. A rock, one foot (0^m3) high, lies 75 yards (68^m6) east-northeast from the northeastern island.

- 30 **Sly Rock**, one foot (0^m3) high, the extreme of the string extending off Mink Point, lies east-northeast $2\frac{3}{4}$ cables from the northeastern Sister Island. About one cable northeast from this rock, 30 fathoms (54^m9) of water will be found.

- 35 **Jarvis Bay**.—From Mink Point, the bold, clean coast trends southwest for $1\frac{1}{2}$ miles thence westerly, forming Jarvis Bay and **Prince Bay**, a small, shallow bay in the north side of the former, with **Beaver Island** in the middle of the entrance. The south side of Jarvis Bay is formed by the north shore of the point of the same name, which trends west by south $1\frac{1}{4}$ miles from the extreme of the point, and is quite deep-to.

- 40 Jarvis Bay is open to the eastward and has good water, with the exception of a shallow bank making off 2 cables from the head of the bay, through which Jarvis River enters at the northwest corner.

Jarvis Point, quite narrow for half a mile back, forms the southeast entrance point to Jarvis Bay.

- 45 **Caldwell Point**, low and formed of gravel covered with grass, lies $1\frac{1}{2}$ miles southwest of Jarvis Point, the coast between being bold and clean. From Caldwell Point, the coast takes a general northwest trend for about a mile forming the northeast side of Crystal Bay, and is fronted by shoal water from one-half to one cable in width.

Chart 2311.

Crystal Bay, just west of Caldwell Point, is $1\frac{1}{4}$ miles wide and extends in half a mile. There is good water in the bay and two small islands in the mouth, but these do not afford much protection from the southward.

Caldwell Shoal, with 6 feet (1^m8) of water over it, lies 2 cables south-southwest from the extreme of Caldwell Point. 5

Buoy.—A red spar buoy marks the southeast edge of Caldwell Shoal.

Caldwell Island, 20 feet (6^m1) high, $1\frac{1}{2}$ cables long northwest and southeast by half that width, lies five-eighths of a mile southwestward from Caldwell Point. It is surrounded by deep water, with the exception of a depth of 12 feet (3^m7) about 50 yards (45^m7) off the northwest end. 10

Sucker Island, lying 2 cables eastward of the western entrance of Crystal Bay, is surrounded by shoal water, which almost joins it to the main shore. The island is 17 feet (5^m2) high and $1\frac{1}{2}$ cables long by half that width.

Victoria Island, lying half a mile off Caldwell Point is the southwesternmost of a long string of islands and shoals, extending some 20 miles northeastward terminating in Angus Islands. 15

The lighthouse on the northwest point of Victoria Island lies $1\frac{1}{4}$ miles southwest of Caldwell Point. The island is $2\frac{1}{4}$ miles long by three-quarters of a mile in greatest width, and quite irregular in shape, having a bight in the southeast side called Victoria Cove, which almost cuts the island in two about the middle. The highest part 284 feet (86^m6) high, is the south entrance point of the harbour. For the most part the shores of the island are deep-to and bold. 20

A shoal, with less than 6 feet (1^m8) of water over it, lies three-quarters of a cable west by south from the lighthouse. 25

Buoy.—A black spar buoy marks the southwest extreme of this danger.

Iroquois Rock, with 6 feet (1^m8) of water over it, lies west-southwest distant five-eighths of a mile from the lighthouse. This shoal is quite small with deep water about it.

Buoy.—A spar buoy painted with red and black horizontal stripes is moored on the south edge of this danger. 30

Clearing marks.—The Sugarloaf, Spar Island, touching Victoria Island, bearing 066° , just clears this danger to the northward; the northwest extreme of Spar Island in transit with the southwest extreme of Victoria Island, bearing 059° passes about 100 yards (91^m4) to the southward. 35

Light.—A *flashing white light* (*Lat.* $48^\circ 05' N.$, *Long.* $89^\circ 22' W.$) is exhibited, at an elevation of 45 feet (13^m7), from a white, square wooden tower surmounted by a red lantern, on the northwestern extremity of Victoria Island.

Tiger Island, 2 cables long east and west by half that width, lies one cable off the southwest point of Victoria Island, to which it is almost joined by shoal water. Between the lighthouse and the southwest point of the island, Cosgrave Bay makes in half a mile. The water is deep, but is quite open to the south-westward. 40

Tiger Rock, quite small, 14 feet (4^m3) high and deep-to on all sides, lies 50 yards (45^m7) west of the west extreme of Tiger Island. 45

Chart 2311.

Albert Islands, three in number, lie $1\frac{1}{2}$ cables off the south shore of Victoria Island, between Victoria Cove and the south extreme of the island. As a rule, the islands are deep-to and a deep passage exists between them and Victoria Island.

Rolland Rock, about 30 yards (27^m4) in diameter, lies $1\frac{1}{2}$ cables east of the west entrance point of Victoria Harbour. Rocks, with less than 6 feet (1^m8) over them, lie $1\frac{1}{2}$ cables northeast and one cable south of this rock. Another rock, with the same depth over it, lies $1\frac{1}{2}$ cables west of the east entrance of the cove.

Devil Island, $1\frac{3}{4}$ cables long and quite narrow, lies one cable northeast of Victoria Island. A rock, called Foote Island, lies about in the middle of the passage between the two.

Jarvis Island, the next in order from Devil Island, from which it is separated by three-quarters of a cable, is $6\frac{1}{2}$ cables long northeast and southwest by $1\frac{1}{4}$ cables in greatest width. The island is quite deep-to.

Jarvis Rock, about 30 yards (27^m4) in diameter, is just separated from the northeast part of Jarvis Island.

Light.—A *flashing white* light (Lat. $48^\circ 06' N.$, Long. $89^\circ 18' W.$) is exhibited, at an elevation of 40 feet (12^m2), from a steel tower with white daymark on Jarvis Rock.

Spar Island, bold and deep-to for the most part, is $2\frac{1}{2}$ miles long northeast and southwest and with a greatest width of half a mile. It rises to a height of 281 feet (85^m6) at the bold north point of the island, and a bluff towards the southwest extreme, known as the Sugarloaf, is 225 feet (68^m6) high. The south and southeast shores of this island are particularly abrupt as 70 to 75 fathoms (128^m0 to 137^m2) of water will be found about 150 yards (137^m2) off the rocks.

Spar Reef, one foot (0^m3) high, and very abrupt to the northwestward, lies one cable offshore and five-eighths of a mile from the southwest point of Spar Island.

Bradshaw Island, about 100 yards (91^m4) in diameter, lies 75 yards (68^m6) to the southwestward of Spar Island, and $2\frac{1}{2}$ cables east-northeast from Jarvis Island. Six feet (1^m8) of water will be found 50 yards (45^m7) to the southwestward from the island. Otherwise it is deep-to.

Spar Channel, lying between Jarvis and Bradshaw Islands, is quite deep with a width of $1\frac{1}{2}$ cables, and is the passage generally used by vessels plying between Port Arthur or Fort William and Washington Harbour, Isle Royale.

Entering take a mid-channel course or rather favour the west side which is deep-to.

From the northeast extreme of Spar Island, a string of small islands, dry rocks, and shoals extends in a northeasterly direction to Thompson Island, a distance of $2\frac{1}{4}$ miles. This string includes Swan Rock, with a depth of 10 feet (3^m0) over it, Arabian Rock 12 feet (3^m7) high, Harty Island 22 feet (6^m7) high, Robertson Island, a group of small rocks, 12 feet (3^m7) high, Moonshine, Eva, and Prefontaine Islands. In addition to these, there are many sunken rocks. About half a mile northwest of this string is another chain of islands and rocks. The largest of these is Slipper Island, and the most westerly rock is Cohen Rock. A spot, with less than 11 feet (3^m4) of water over it, lies $1\frac{1}{2}$ cables west of Cohen Rock.

Chart 2311.

Thompson Island, quite deep-to and 276 feet (34^m1) high towards the southwestern part, is almost 4 miles long northeast and southwest by only $2\frac{1}{2}$ cables in width at the widest and highest part. The north extreme of the island bears south-southwest distant $2\frac{1}{4}$ miles from Greenstone Point, Pie Island. 5

Anderson Island, separated from the northeast extreme of Thompson Island by a deep water passage 100 yards (91^m4) in width, is about 75 yards (68^m6) in diameter and surrounded by deep water.

McKellar Island, 76 feet (23^m2) high and $1\frac{1}{2}$ cables long, is the northeastern island of the chain extending from Victoria Island. It lies $1\frac{1}{2}$ miles southward of Greenstone Point, Pie Island. Between McKellar and Thompson Islands are two small islands, Magee and Hawken, and several sunken rocks. 10

Directions for Thunder Bay to Port Arthur and Fort William.—For recommended courses see page xxvi.

Crystal Bay to Pigeon River.—From Crystal Bay, the main shore takes a general west-southwest trend for $4\frac{1}{2}$ miles to the head of Little Trout Bay, and for the most part this stretch of shore is bold, deep-to and unbroken with the exception of Cloud Bay. 15

A rock, one foot (0^m3) high, lies three-quarters of a cable offshore and seven-eighths of a mile west of Crystal Bay. 20

Cloud Bay, $2\frac{1}{4}$ miles west of Crystal Bay, is really an arm on the northern side of Little Trout Bay. The bay is $3\frac{1}{2}$ cables wide at the mouth, extending in a half mile and is a mile long. Shallow water makes off from the shores, leaving a space of from 3 to 5 fathoms (5^m5 to 9^m1) deep in the middle, about 4 cables across, affording limited anchorage. Cloud Bay village contains about half a dozen families. The International Highway from Fort William to Duluth passes about 3 miles from the point where the Cloud River enters the bay. The wharf on the Cloud River, near its mouth, is 175 feet (53^m3) in length, parallel to the stream, with 3 to 5 feet (0^m9 to 1^m5) of water alongside. 25

Buoy.—A black spar buoy is moored 2,000 feet (609^m6), 089° , from the above wharf. 30

McKellar Point, west-southwest distant 2 miles from Victoria Island light, is the extreme of a narrow, but high and bold peninsula extending in an east by north direction for 3 miles from the head of, and forming the south side of, Little Trout Bay. The shores are clean, with the exception of the southeast point, where very shoal water makes off three-quarters of a cable. 35

Little Trout Bay, just west of McKellar Point, which is the eastern entrance point, is from one-half to three-quarters of a mile across and extending in about 3 miles, has clean shores and affords perfect shelter from all winds, with anchorage in from 5 to 7 fathoms (9^m1 to 12^m8) over stiff, mud bottom. 40

Big Trout Bay.—From McKellar Point, the south side of the peninsula extends in a general west by south direction for $3\frac{3}{4}$ miles to the head of Big Trout Bay, being deep-to, with the exception of the point inside the Cloud Islands. The shores of the bay are deep-to on all sides and the water deep, affording anchorage in 15 fathoms (27^m4), with shelter from anything but easterly weather. 45

Chart 2311.

A small shoal, with 12 feet (3^m7) least water, and having deep water about it, lies three-quarters of a mile northeastward from the southeast entrance point of Big Trout Bay, and another spot, with 28 feet (8^m5) of water over it, lies 2
5 cables to the eastward of this shoal.

Cloud Islands, three in number, and **Pinnacle Rock**, deep-to, lie 3 cables offshore in the entrance to Big Trout Bay. The two southern islands are separated from the northern island by a deep water passage. A rock, with less than 6 feet (1^m8) of water over it, lies $1\frac{1}{2}$ cables off the southwest end of the south-
10 west island. A rock, with 9 feet (2^m7) of water over it, marked "Position doubtful", is reported to lie about 5 cables east by north from the southeasterly Cloud Island.

Pine Point, the southeast extreme of which is half a mile south of the entrance point to Big Trout Bay, is deep-to on all sides.

15 From Pine Point, the coast trends west by south 2 miles to the entrance to **Pine Bay**, which is a rounding bay about a mile in diameter. The water is shoal, with the exception of a small space behind Naomi Island across the mouth of the bay.

20 The channel, entering, lies close to the east end of Naomi Island, to avoid a rock, one foot (0^m3) high, lying a cable north by east from the island.

Big Pine River enters the bay at the northwest part and Little Pine River on the west side.

Pigeon Point, (*Lat.* $48^\circ 00' N.$, *Long.* $89^\circ 30' W.$) the southeast entrance point to Pigeon Bay, is deep-to on all sides and lies 8 miles southwestward of
25 Victoria Island light.

Pigeon Bay.—From Pigeon Point, the coast trends west for 4 miles to the head of, and forming the south side of Pigeon Bay, is for the most part bold and deep-to, until near the head of the bay, where shoal water makes out for 3 cables off the mouth of Pigeon River, which enters the bay at the southwest
30 corner. The bay is about one mile wide and bordered by high hills, which afford protection except from the eastward. The International Boundary line between Canada and the United States passes through the river and bay.

Finger Point, deep-to and quite narrow and extending easterly for a little over a mile, divides Pigeon Bay into two arms, and forms the north side of the
35 south arm or main part of the bay.

Marin Island, 150 yards (137^m2) long east and west, lies 150 yards (137^m2) east from the extreme of Finger Point. It is deep-to; however, a small rock lies 50 yards (45^m7) to the eastward, and 15 feet (4^m6) of water will be found 100 yards (91^m4) farther off in the same direction.

40 **Boundary Islands**, two in number, 20 and 30 feet (6^m1 and 9^m1) high, respectively, lie in the middle of a narrow reef, extending east and west for 5 cables, lying about in the middle of the entrance to Pigeon Bay proper.

Shoal water extends from the islands easterly for $1\frac{3}{4}$ cables, and less than 6 feet (1^m8) of water will be found one cable west of the western island.

45 **Acadia Rock**, with 6 feet (1^m8) of water over it and very small, lies about the middle of the harbour.

Chart 2311.

Laura Grace Rock, with 7 feet (2^m1) least water over it, lies 1,100 yards ($1,005^m8$) from the southeast entrance point to Pigeon River, and exactly in line between the northeast cluster of mooring piles off the river, and the north tangent of Pigeon Point distant 500 yards (457^m2) from the former, and west by south distant 450 yards (411^m5) from Acadia Rock. Both these shoals are south of the trend of Boundary Islands, and great care must be taken to avoid them. 5

North Arm, as that part of Pigeon Bay north of Finger Point is called, extends in about $1\frac{1}{4}$ miles by 3 cables in width. The north side of the point is clear, but shoal water makes off the head of the arm and north shore, from one to $1\frac{1}{2}$ cables. 10

Owen Island, three-quarters of a cable long and quite narrow, lies near the extreme of the shoal water off the north shore of the north arm of Pigeon Bay, bearing northwest 3 cables from the extreme of Finger Point.

Anchorage, in from 5 to 8 fathoms (9^m1 to 14^m6) of water over mud bottom, may be had in either arm of Pigeon Bay but, as the holding ground is not good, it is not recommended, and a vessel requiring shelter in this vicinity should proceed to Little Trout Bay, about 6 miles to the northeastward, where anchorage in any desired depth over stiff mud bottom will be found in perfect shelter from all winds. 15 20

United States chart 98.

The description of Isle Royale and vicinity is taken from the United States Government Sailing Directions.

ISLE ROYALE, lying about 15 miles off the entrance to Thunder Bay, has an extreme length from the southwest to the northeast of about 44 miles, and a maximum width, near the western end, of about 9 miles. The rocky and irregular formation of its shores results in numerous indentations and detached islets and reefs. Good anchorage and shelter may be had in many of the small harbours to be found around the island. 25

United States chart 981.

Chippewa Harbour is an indentation in the south shore of Isle Royale, about 15 miles to the southwestward of the northeast extreme of the island. It opens to the southeastward, with a general width of about 200 yards (182^m9) for a distance of 600 yards (548^m6) from the entrance, where the shores contract to a narrow passage about 15 feet (4^m6) in width and 7 feet (2^m1) deep, leading into the inner harbour. The water in the outer harbour varies from 20 fathoms (36^m6) at the entrance, to 6 fathoms (11^m0) near the head, over rock bottom. 30 35

Siskiwit Bay, on the south side towards the southwest part, is the largest indentation in the island, being $2\frac{1}{2}$ miles wide and extending in about $11\frac{1}{2}$ miles. Anchorage, with good shelter from all but northeast winds, will be found $1\frac{1}{2}$ miles south of Wright Island, in the northeast part of the bay, care being taken to avoid the foul water lying three-quarters of a mile south of the island. The south side of the bay is formed by a double line of islands, almost joined by submerged rocks, which extend, in a direction almost parallel to the south shore of Isle Royale, from **Point Houghton** for 8 miles. About five-eighths of a mile east of Point Houghton is a passage into the bay, with an available depth of 17 feet (5^m2) marked by two black spar buoys. 40 45

United States chart 981.

Wright Island, in the northeasterly part of the bay, has a small wharf 15 feet (4^m6) long extending into a 15-foot (4^m6) depth; it is located on the south side of Hopkins Harbour.

- 5 **Menagerie Island**, 3 cables long and quite narrow, lies 3 miles east-south-east of Wright Island. Shoal water, with a depth of 4 feet (1^m2), lies 5½ cables northeastward of the lighthouse. An 18-foot (5^m5) spot, lies 11 cables from the light in the same direction.

- 10 **Light**.—Isle Royale *flashing white light* (Lat. 47° 57' N., Long. 88° 46' W.) is exhibited, at an elevation of 72 feet (21^m9), from a white, octagonal stone tower with dwelling attached, on Menagerie Island.

- A channel with 18 feet (5^m5) depth, useful to small craft seeking shelter in Malone Bay, behind Wright Island, is marked by a range of targets, each in the form of a white diamond above a black diamond, on the shore of Isle Royale in the alignment of about 311°, plainly visible a mile beyond Isle Royale light in clear weather. To enter, keep the targets well in range until past a 3-foot (0^m9) rocky shoal, lying 830 feet (253^m0) 017°, from the northeast corner of the inner island on the west side of the channel, and 170 feet (51^m8) west of the range line; then open the ranges a little to westward, to avoid an 8-foot (2^m4) shoal on the east side close to the range. Not much departure from the range should be attempted, until about mid-channel between the last island and the main shore of Isle Royale, when a safe entry may be made into the harbour behind Wright Island, favouring the Isle Royale side. A black spar buoy marks the north side of the shoal water extending northeasterly from Wright Island. The harbour affords excellent protection from all winds, with mud and clay bottom.

- Harlem Reef**, the most outstanding to the southeastward, with 2 feet (0^m6) of water over it, lies one mile off the islands and southwest distant 5 miles from Isle Royale light. The south side of Isle Royale, from Siskiwit Bay westerly to the southwest point of the island, should generally be given a berth of one mile, because of the existence of ledges and rocky spots rendering the coast very dangerous.

A shoal, with 14 feet (4^m3) least water, lies one mile off the shore of the island and 3 miles east from **Long Point**, situated near the southwest end of the island.

- 35 **Rainbow Cove**, a crescent-shaped indentation at the southwest end of Isle Royale, is about 2¼ miles wide. Shoal water makes out from the shores of the bay from 2 to 3 cables.

The south shore of Isle Royale, from Long Point westward to Rainbow Cove, is free from outstanding shoals and may be approached to within three-quarters of a mile.

- 40 **Grace Harbor** and **Washington Harbor**, in the westerly end of the island, are good, the former giving protection from all but southwest winds, with generally good holding ground, and the latter from all winds, with good holding ground. Three black spar buoys mark a passage, with a depth of 20 feet (6^m1), between **Washington** and **Booth Islands**, connecting the two harbours. On the south side of Booth Island, there is a wharf about 75 feet (22^m9) long, with a depth of 15 feet (4^m6) alongside. On the easterly projection of Washington Island, there is a crib wharf 150 feet (45^m7) long, facing in to Washington Harbor, with a depth of about 20 feet (6^m1) alongside. There is a spot, with a depth of 2 feet (0^m6) over it, three-quarters of a mile southwest from Washington Island and on the north side of the entrance to Grace Harbor. There are many

United States chart 981.

detached rocky shoals within a distance of 3 miles to the southwest and northeast from Washington Island, in the vicinity of Rock of Ages, which must be carefully avoided in approaching or leaving these harbours. Entering Washington Harbor, there are a number of shoals about a third of a mile north of Washington Island and on the north side of the vessel course, and other shoals about 1,100 feet (335^m0) north of Grace Island and to the south of the course. At the inner end of Washington Harbor there are two crib wharves about 600 feet (182^m9) apart; the northerly wharf is in ruins and the southerly wharf is about 195 feet (59^m4) long with a depth of 20 feet (6^m1) at the outer end, and 19 feet (5^m8) alongside.

Light.—Fog signal.—Radio beacon.—A light (*Lat. 47° 52' N., Long. 89° 19' W.*) showing a *group flash white* light of 2 flashes every 10 seconds, is exhibited, at an elevation of 117 feet (35^m7), from a buff, conical brick tower on **Rock of Ages**, which lies 2.4 miles westward of Washington Island.

A fog signal sounds *one* blast of 2 seconds duration every 30 seconds.

There is a radio beacon at the station which is synchronized with the fog signal for distance finding.

Five spots, with depths of 7 to 16 feet (2^m1 to 4^m9), lie from one to 1½ miles northeast of Rock of Ages, close to the north of the line of approach from the light to Washington Harbour. Several shoals, with depths of 3 to 4 feet (0^m9 to 1^m2), lie within a distance of one mile to the south and southwest of the rock; the most southerly spot is marked by a red spar buoy, located about a mile south-southwestward of the light.

The north shore of Isle Royale from McGinty Cove at the westerly end to Todd Harbour, about midway of the island, is bold and for the most part deep-to; but at a point about 6½ miles from McGinty Cove two spots, with depths of 7 and 6 feet (2^m1 and 1^m8) over them, lie three-eighths of a mile offshore. About 6 miles southwesterly of Todd Harbour is an exposed reef, five-eighths of a mile offshore, called Gull Rocks.

Todd Harbour, about midway of the north shore, affords good protection except in northerly winds. Care should be taken to avoid the many detached rock shoals in the middle and easterly part of the harbour.

Between Todd Harbour and McCargoe Cove, a berth of one mile should be given the main shore to avoid the outlying shoal spots. Hawk Island is about three-eighths of a mile offshore in this stretch.

McCargoe Cove is a narrow body of water, about 2 miles long, running obliquely into the north side of Isle Royale, about 4½ miles to the eastward of Todd Harbour. After the entrance is passed, the average width is 500 feet (152^m4) and the depth of water 30 to 40 feet (9^m1 to 12^m2). The entrance should be passed with care, to avoid possible small rocks or boulders. A depth of 20 feet (6^m1) can be carried into the cove, although at one place, opposite the northern part of Birch Island, this depth has a width of only 125 feet (38^m1). A rocky shoal projects from the west point forming the entrance to the harbour, around which a vessel, to keep in 18 feet (5^m5) or more of water, must turn through 90° on a radius of about 200 feet (61^m0).

Light.—A light (*Lat. 48° 11' N., Long. 88° 25' W.*) showing a *group flash white* light of 2 flashes every 10 seconds, is exhibited at an elevation of 40 feet (12^m2), from a white, skeleton tower on **Blake Point**, the southeastern extremity of Isle Royale.

A red sector shows over Canoe Rocks from 090° to 105°.

United States Chart 981.

The northeasterly end of Isle Royale is of decidedly rugged and broken formation, consisting of many narrow peninsulas, islands, and ridges, all with a northeasterly trend, and interspersed with narrow channels and bays of deep water. On the northerly side, after passing McCargoe Cove, the outer limits are marked by Amygdaloid Island and Canoe Rocks and a line of islands and reefs stretched between them. An 11-foot (3^m4) shoal, marked by a black spar buoy on its northerly side, lies 1,500 feet (451^m0) 076° from Blake Point light. About 6,000 and 4,500 feet (1,828^m8 and 1,372^m0) eastward of the light are two spots, with depths of 13 and 4 feet (4^m0 and 1^m2), respectively, over them, which must be carefully avoided; a spar buoy, painted in red and black stripes, marks the southerly spot of 4 feet (1^m2).

United States chart 98.

Passage Island, 1½ miles long and a quarter of a mile wide, lies with its southwest end 3½ miles northeast of Blake Point.

Light.—Fog signal.—Radio beacon.—A *flashing white* light (Lat. 48° 13' N., Long. 88° 22' W.) every 7½ seconds is exhibited, at an elevation of 78 feet (23^m8), from a grey, octagonal stone tower on the southwestern end of Passage Island.

A fog diaphone sounds *one* blast every 30 seconds.

There is a radion beacon at the station, which is synchronized with the fog signal for distance finding.

Gull Islands, a string of four small islands, lie 5¼ miles north-northeastward of Passage Island. A shoal, with a depth of 2 feet (0^m6) over it, lies half a mile south of Gull Islands. A group of detached rocky shoals, with 7 to 12 feet (2^m1 to 3^m7) of water over them, lies from one to 2½ miles northwesterly of Gull Islands, and 3 to 4 miles northeasterly of Passage Island; vessels should avoid this locality.

Bateau Rock, 5 feet (1^m5) high with deep water around it, lies 7 miles eastward of Gull Islands. A shoal, with a depth of 8 feet (2^m4) over it, lies half a mile westward, and a rock, with less than 6 feet (1^m8) over it, lies a third of a mile eastward of Bateau Rock.

United States chart 981.

Duncan Bay is an inlet at the northeast end of Isle Royale, on the northerly side of the peninsula terminating in Blake Point; it opens to the northeast and is about 2,000 feet (609^m6) wide at the entrance. The bay is divided, at about one mile from the entrance, by a point extending northeast in the general direction of the inlet, forming a bay on the north side about 500 feet (152^m4) wide and half a mile long, with depths of 24 to 78 feet (7^m3 to 23^m8) at the head, rock bottom, and the 3-fathom (5^m5) lines close to shore. The main inlet continues south of the point, gradually narrowing to a shoal and contracted passage leading to a large bay beyond; depths vary from 126 feet (38^m4) at the outer entrance to 21 feet (6^m4) near the contracted passage to the inner bay, with rock bottom. There is a 17-foot (5^m2) shoal about 400 feet (121^m9) northeast of a small island near mid-channel south of the point.

Tobin Harbour, parallel to and southward of Duncan Bay, gives protection in all winds, with good holding ground, but will admit only small craft because of its narrow entrance. Avoid the detached shoals lying east of Blake Point, previously mentioned. Tobin's dock is about 100 feet (30^m5) long and vessels drawing 12 feet (3^m1) can reach it, but the dock is in poor condition.

United States chart 981.

Rock Harbour, to the southward of Tobin Harbour and extending in the same direction, is about 13 miles long, of which length about $9\frac{1}{2}$ miles is enclosed from the lake by a chain of islands and shoals. It is an excellent harbour, affording protection in all winds with good holding ground and ample depths, and having several good small boat docks. 5

In the approach to the eastern entrance, a sharp lookout should be kept for the shoal spots east of Blake Point. There is also a wide and deep entrance from the south, opposite Scoville Point near the outer end of the harbour.

The Middle Islands Passage into the harbour, at the inner end of the island chain, has an available depth of 26 feet (7^m9) and is marked by one red and two black spar buoys. 10

Light.—Fog signal.—A light showing a *group flash white* light of 2 flashes every 6 seconds, is exhibited, at an elevation of 22 feet (6^m7), at the northwest end of **Caribou Island**, at the east side of the inner end of Middle Island Passage. 15

A fog diaphone sounds *one* blast every 20 seconds. Vessels should advise the National Park Service, Houghton, Mich. of date and how the fog signal will be required.

At **Rock Harbour Lodge**, on the north side of Rock Harbour, about 4 miles from the eastern entrance, is a crib wharf 105 feet (32^m0) long, with a depth of about 18 feet (5^m5) at its east end, and 16 feet (4^m9) toward the west end; a 12-foot (3^m7) spot, lying 300 feet (91^m4) west of the dock, should be avoided. At the National Park Headquarters on Mott Island, in central Rock Harbour, is a crib wharf about 380 feet (115^m8) long, with a depth of 20 feet (6^m1) at the outer end, decreasing to 13 feet (4^m0) at mid-length; the inner half will accommodate small craft. The fully enclosed westerly $3\frac{1}{2}$ miles of the harbour is obstructed at mid-length by shoals, through which there is a 14-foot (4^m0) passage, marked by a red and a black spar buoy. 20 25

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